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Package Bees North and South---Part Two

By M. G. Dadant

Receiving the Shipment

IT is understood that all hives and equipment are already prepared and on the ground for the receipt of the packages, with proper entrance blocks to reduce the entrances till the colonies become strong enough to fight their own battles.

If drawn combs are available, these will add greatly to the early efficiency of the package. A full comb or two of honey is also a great help. There are, however, thousands of packages of bees hived each year on frames of foundation, and with complete success. Where such are used, however, due allowance should be made in time used for drawing combs, and in the additional feed necessary to carry the young colony through to the honeyflow.

By all means, notify your express agent or your postmaster, as the case may be, that you are expecting a shipment of bees on a certain date, so that he may notify you at once.

If possible, receive the bees personally at the point of receipt. Note carefully the condition and insist that the express agent note exactly the condition of the bees on your express waybill. Bees are carried at double first-class rates. Accordingly, they should be given extraordinary care and expedition, and any losses, where it is the carrier's fault, should be reimbursed through a claim properly entered. Under no condition take your own opinion as to whose fault it is that bees arrive in poor condition, but receipt for them in the exact condition in which they were received. Never refuse to receive a shipment, even though the bees be dead, as this absolves the express company and invariably places the loss on the shipper, many times making a cause for controversy.

If the shipper is furnished with properly notated express receipts, he will enter claim for such loss as he

deems advisable, and it will lie between him and the claim department to place the blame for such loss.

Handling the Packages

In a majority of instances the bees arrive with very little loss. Some advise waiting until evening to empty the packages into the hives made ready to receive them. Some advise emptying at once. Much depends on the condition of the package, the time they have been on the road and the convenience of the person handling them.

If the bees appear uneasy, it would be well to give them a liberal feeding by painting the wire of the cage with a moderately thick sugar syrup. Usually this is to be recommended. Open the top of the cage, using a very little smoke, and remove the queen in her cage, placing it at the top of the frames and between two of them at one side of the hive, and remove the cork or other stopper to the candy in the cage. By taking out a few frames at the other side of the hive, the package of bees may be inserted, after first shaking out a few bees alongside the queen.

Cover up quickly, reduce the entrance as a protective measure, and, unless it be necessary for feeding purposes, leave the colony undisturbed for three or four days at least. Some advocate shaking all bees from the package at once into the hive, replacing the full complement of frames. Others shake the bees in front of the hive, but we would prefer the first plan outlined as less apt to cause drifting of bees from one colony to the other. Drifting may also be partially averted by emptying your packages in scattered parts of the yard, allowing one colony to fly and settle before another one next to it is released.

If the bees arrive during a great

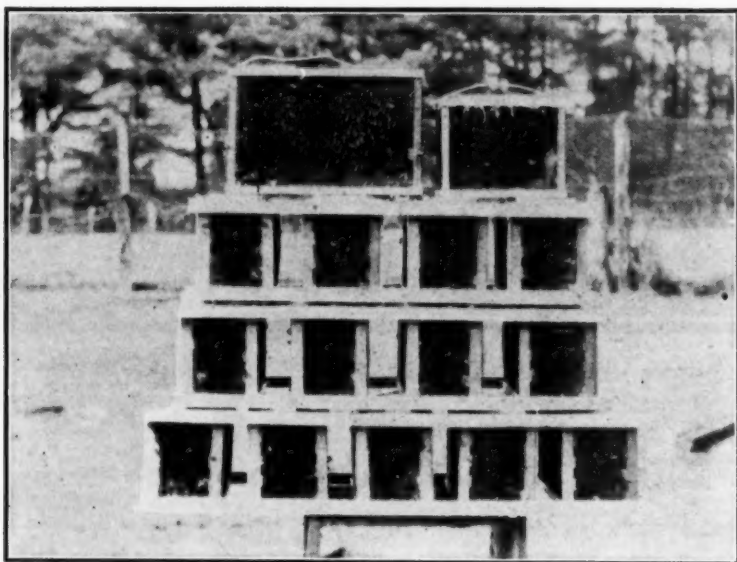
heat or extreme cold, the packages may be removed to the cellar, and, if the cold continues, may even be inserted into their respective hives while in the cellar. This is to be avoided, however, unless absolutely necessary. Frequent feeding may be necessary to induce comb building and brood rearing unless the honeyflow is sufficient.

What the Buyer May Expect.

We usually get what we pay for. No purchaser expects to get a linen handkerchief for 10 cents. Nor does he get hard coal at soft coal prices; nor a tailor-made suit at the price of a machine-made one. So it is with our bees. While there may be some difference in the cost of production, and other reasons for a moderate difference in price of packages, we may ordinarily infer that any great difference in price will have to be made up by some slighting of fundamentals which will work against the best satisfaction as between buyer and shipper. Poorly made packages, delayed shipment, old bees, poor queens, poor routing, failure to make up losses en route, etc., may be some of the penalties of a low price. This is not always so, but may readily be so.

Unless you are well acquainted with your shipper, it is a mistake to get your first big order all from one shipper. His weather conditions may make him fail you, or he may not be the type of a shipper whom you would successively patronize.

Bees should arrive on time. If they do not, it is the fault of the shipper. Of course, any fair-minded man will make some little allowance for inclement weather, but, on the other hand, the shipper should also have made some such allowances in figuring his possible production so that the delay should not be prolonged.



As the bees arrive in the North

If you can, help your shipper by suggesting routing. The shipper, however, should not be instructed exactly how to ship, as he is probably better acquainted, or at least should be, with the express routes than you are.

Be sure to examine packages on arrival, note loss on express receipt, report immediately to shipper, sending him both the express receipt he sent you and the one received from the express company at your end.

If any trouble in getting satisfactory service or adjustments with the shipper, report the same as soon as possible to the journal in which you saw his advertisement. The only way the unsatisfactory shipper can be excluded from causing further dissatisfaction to others through advertising is by letting the bee journals know it. They will appreciate the favor and do all in their power to help correct the matter.

What the Shipper Should Do

Every order warrants an acknowledgment. Use a special form of postcard if desired, but by all means acknowledge the order **on the day it is received**, and give shipping date and any other information you may think of interest to your buyer. You like attention when you buy. So do your customers when they buy of you.

Use good, strong packages that will stand shipment, and furnish young bees and young, vigorous, mated queens of pure origin. Do not furnish hybrids or black bees without plainly stating so in your advertising. Avoid drones or old bees, and most especially virgin queens, in your packages, and give ventilation according to the weather. Rather have excess ventilation than not enough.

Have enough bees in the package so that they will arrive full weight. Usually a 25 per cent overrun will make up for shrinkage unless the bees are shaken from combs with fresh honey, which in itself is detrimental to their best condition on arrival at destination. Beef cattle are sold in Chicago at weights on arrival. Why not so with bees?

Ship on the dates specified, or if a day or two delay on account of unavoidable conditions, notify your customers. Be sure to accompany packages with all proper certificates. Many a package has been turned back at the Canadian border, a dead loss to the shipper, through oversight of needed papers. Be sure to send copy of signed express receipt to the buyer immediately the bees are shipped. Otherwise, how can he

be sure just what you have shipped and the weight?

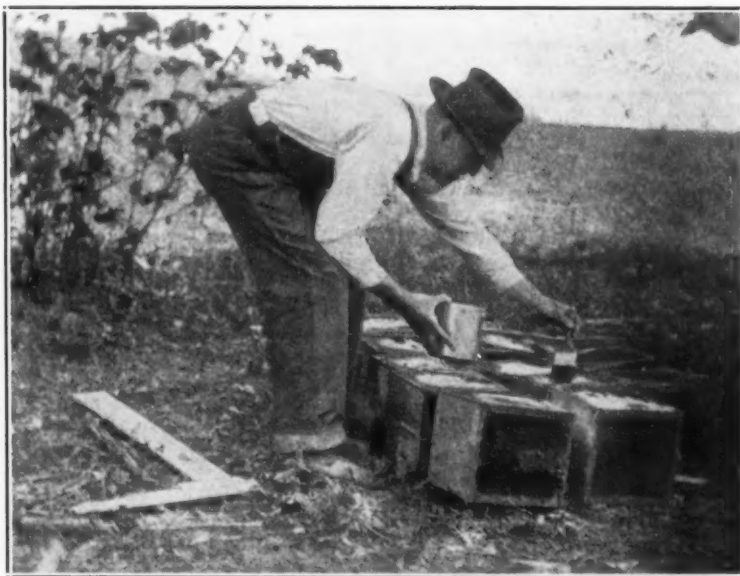
Use precaution in routing. A day's delay means more chances of loss. A good time to get your routing is during the winter and spring, when the orders arrive, having all in readiness when the packages are shipped out. Your express agent should route all packages the best way. But none of us are infallible.

Promptly make good all losses, by replacement, or, if necessary, by cash, and put in all claims for losses with the carrying companies yourself. Do not expect the customer to do so. Remember you are guaranteeing satisfaction. It is up to you to do favors to the customers, not the other way round.

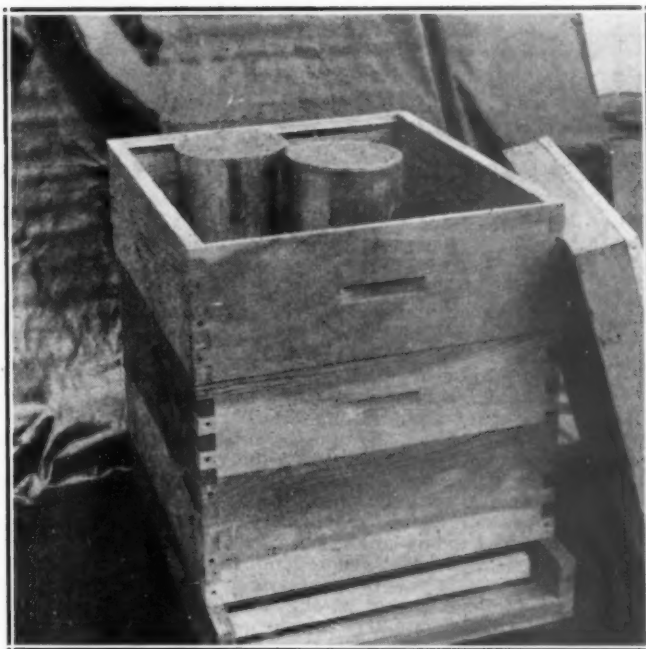
Some of the drawbacks to prompt shipping are weather conditions, robbing, nectar-laden colonies, etc. Many shippers have overcome this by sufficiently crowding the bees so that they can place an excluder and a super of dry combs above the brood nest and give a few puffs of smoke at the entrance. They then go on to another colony similarly, and by the time they have a dozen colonies so prepared the first set of combs is usually sufficiently supplied to yield a two- or three-pound package, after which excluder and super are removed to repeat the operation on another colony.

This method assures of absence of drones or queens in the shaken package, and avoids daubing the bees, as is necessary when shaking nectar-laden combs. It also minimizes robbing.

Securing of packages during the middle of the day assures of young bees, since most of the old bees are in the field at this time.



Painting the cages with sugar syrup before releasing the bees



Bees in hive and feeders on. Entrance closed to small opening

The feeding of packages by painting the outside of the cage with two-to-one syrup just previous to shipment tends to quiet the bees and cut down undue activity or restlessness of the bees.

Percentage of Trouble

In the fifteen years I have handled the advertising of a bee publication, it has always been a surprise to me that the volume of business could be so great with so few causes for complaint as between shipper and buyer. Outside of a very few advertisers who have deliberately tried to mislead the journals into accepting their advertising, and then mislead the customer into sending money for inferior stock, most dissatisfaction arises from two cases.

The first is delay in shipping orders. Too many breeders overestimate their capacity, make too small allowance for weather conditions, shortage of flows, etc., and accept more orders than they are able to fill.

The second criticism is lack of understanding between buyer and shipper, and in this the shipper is not always to blame. Failure of the buyer to receive bees because same are dead or in bad condition is reason enough for the shipper to become disgruntled. He has no recourse with the express company, may be made to stand express both ways, and is out the original shipment besides.

The package business has its drawbacks, at both ends of the line, but it is yet a young business, and still

one which has asserted in a short space of time that combless package shipping has come to stay.

Control of Bee Pasture

By Glen Perrins

With Utah expanding steadily as a honey-producing state, it may be necessary in the near future to establish a sort of traffic regulation system for bees, that they be permitted to do their buzzing and nectar gathering only within certain areas.

Figuratively speaking, this is the recommendation of Harden Bennion,

State Commissioner of Agriculture, that was recently discussed at the annual convention of the Utah State Beekeepers' Association in Salt Lake.

"Under existing law," says the apiarist, "a beekeeper may plant his apiary, or any number of them, on a tract of ground barely large enough to stand his hives upon, and depend for forage solely upon the fields and gardens of his neighbors, regardless of whether or not such neighbors are dependent on their fields for forage for bees of their own. Such action," decries the commissioner, "is nothing short of larceny and should be prohibited by law."

Many California beekeepers ship into Utah, in the spring, to take advantage of the copious wild flower growth and the heavy blooms of the alfalfa field. Owners of these fields cannot chase off bees as they can other species of livestock, yet bees are officially classed as foragers and grazers along with cattle and sheep.

Under the proposed system, which is understood to be favorable to the majority of beekeepers, the state bee inspector will be given the power to direct an outside apiarist to a spot where he may settle without embarrassing a land owner having bees of his own. It is the general contention that a property owner, whether he has bees on his own or rents his land to another beekeeper, deserves protection against encroachment of this type.

Commissioner Bennion admits it will be a difficult task to erect fences against migrating swarms of bees, but he feels the present situation is unjust to the domestic producers and therefore should be remedied.

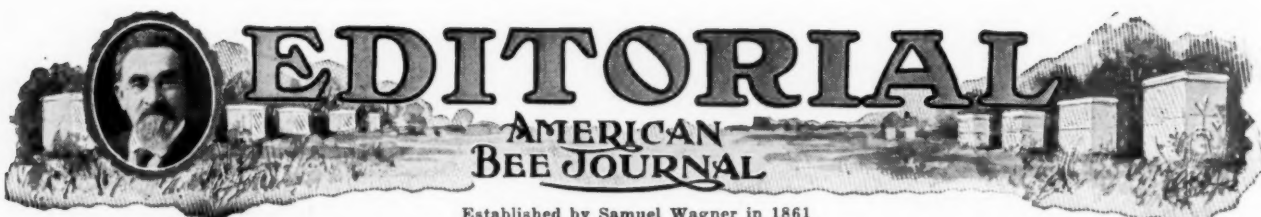
A Word For Honey

W. Schipper

The book, "The Lazy Colon," by Charles M. Campbell, associated with Albert R. Detwiller, M. D., New York, the Educational Press, contains the following statement:

"Grape sugar, such as that of honey, raisins, figs, fruit and malt sugar, is wholesome. Comb honey is laxative. Some persons well known to Weber (Sir Herman Weber) ascribed their good health to the regular use of honey at breakfast. Comb honey was largely used by the ancients. Many people who eat large quantities of cane sugar, especially with cereals, where it often develops fermentation, will be surprised to know that if grape sugar and fruit sugar are introduced into the blood they can be directly utilized by the body, whereas cane sugar when so injected is useless. When eaten it must be changed into grape sugar before it can be utilized. Genuine honey is a food like none other; the sugars in it are directly assimilable. It imparts to the human economy more full value than meat or eggs. The energy or fuel value of an egg is 83 calories, while an ounce of honey furnishes 95 calories. An analysis shows that while sugar contains no lime or iron, honey has 6.70 per cent of lime and 1.20 per cent of iron."

New York.



Established by Samuel Wagner in 1861

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Queenless Colonies In Spring

Drone-combs in the Brood Chamber

No matter how careful we are, no matter whether we replace our old queens in the fall with younger stock, we will nearly always find some queenless colonies in spring, from one to five per cent of the total number of colonies.

What are we to do with those queenless colonies? Most people unite them with stronger ones. Well, it is not a bad plan, but as their bees are old, those colonies are of but little value. Nowadays, when one can buy queens from the South at small cost, it is as well to order queens and a pound or two of bees and insert them in those hives. Usually if we give the colony a comb of brood from some other hive, it will accept a queen without difficulty. Then it is just as if we had made a division. This colony will not yield any crop, but it will become strong for the fall or summer crop and will be equal to a division made at the time of swarming.

It is generally held that a colony with one or more drone-laying workers is absolutely worthless and will not accept a queen. But I have never failed to have a queen accepted by such a colony, and that is, I am convinced, because I mistrusted her acceptance, owing to the bad reports concerning drone-laying colonies, and for that reason I always gave them a worthless queen, a queen which I meant to kill because of her being a hybrid or for some other defect. Such a queen, just removed from her colony, being in good laying condition, is readily accepted, while a queen that has been shipped and has been caged for some time, therefore not in prime laying order, is more likely to be rejected. I am under the impression that, in many cases where people claim to have no difficulty in queen introduction, it is because they introduce queens from one hive to another, queens in good laying order.

The advantage of saving a queenless colony in spring, instead of uniting it to another, is found in the saving of a unit. When we unite a colony to another we leave a hive empty, we lessen the number of colonies by that much. If we give it a queen, we are simply making an early division, and if it is supplied with a comb of brood it soon gains strength and becomes a good unit. But there are conditions where this is inadvisable; for instance, where the colony is so reduced in numbers that it cannot take care of brood. In such a case there is no choice but to unite it with another.

Removing Drone-comb

Spring is the proper time to remove all crooked combs and most especially all drone-comb. Many people do not pay any attention to the presence of drone-comb, and yet some of those same persons will destroy undesirable drones by cutting their heads off in the cells before they emerge from the cell. This is waste, for not only have the drones been produced with much expenditure and labor by the bees, but when we destroy

them in this way the queen will again fill those combs with eggs, for the very same reason that caused her to lay eggs in them in the first place. The proper thing to do is to cut out this drone-comb before any brood is reared in it and replace it with worker-comb. It is true that in rare cases the bees will build drone-comb on worker foundation, but these examples are so rare that they are hardly worth considering. I figure that every piece of drone-comb removed in spring and replaced with worker-comb will economize as much honey annually as that comb can contain. But we must replace it with worker-comb, else the bees would probably rebuild drone-comb there, for the same reason that caused them to build drone-comb there in the first place. There is not a single operation in the apiary which is as economical as that of changing drone-comb to worker-comb, in colonies where we do not wish drones produced. This must be done at the time when there is the least amount of honey and of brood in the combs, or some time before fruit bloom.

The great number of drones that may be reared in a small space is not sufficiently appreciated by the average honey producer. There are about eighteen drone-cells in a square inch of comb, or thirty-six if we compute both sides of the comb. So, in a piece of comb four inches each way approximately 575 drones will be reared. In the same space we might secure about 860 workers. True, it does not follow that this number of workers will be reared in that same space, but there is a great probability that more workers will be reared than drones would have been produced. In an ordinary colony, left to its own devices, without the use of comb foundation, from one-seventh to one-tenth of drone-comb will be built, so that it may produce as many as 3,000 to 5,000 drones and thereby consume all that it produces in the way of surplus. This evidences the necessity of doing away with drone-comb and replacing it with worker-comb.

It is also important to prepare for the rearing of desirable drones in selected colonies, for purposes of reproduction. To this end we place one or two drone-combs in colonies from which we desire to have reproducers. We select our reproducers in all farm stock, why not in bees?

Two Papers For English Bee Men

We acknowledge receipt, from Mr. D. Morland, M. A., of the Rothamsted Experimental Station, England, of two reprints of researches made at the Institute. The first has to do with experiments upon metal combs and upon the position of combs relative to the hive entrances. It will be remembered that in this country the entrances are nearly in every case at right angles with the position of the combs, so that several combs communicate directly with the outside, while in some countries they place a great importance upon having the combs hanging curtainwise across the entrance. Evidently their experiments appear to indicate that our opinion of the insignificance of this matter is right.

As to the metal combs or semi-combs, they conclude, as we did after positive trial, that they are not at all suitable in localities where great changes of temperature exist.

The second paper gives a very clear description of the method employed to detect and study the mites (*Acarapis woodi*) in the tracheal system of the thorax of the bee. Two cuts accompany this study.

Our thanks are due to Mr. Morland for his courtesy.

Bee Packages From the South

The following letter was received from one of the men who have had the most extended experience on receiving bees in pound packages. His arguments are good. Let us hear from both sides on this matter. The package business is going to become greater and greater and it is well to enlighten ourselves, both purchasers and shippers:

"In your editorial, in the March issue, on package bees from the South, you raise an interesting point, and one to which I have given some thought before writing these notes, and I would like to hear what the shipper has to say regarding it.

You say, 'But if they arrive in bad order he must not lose his temper and refuse them.' I am thinking of a shipment that arrived on candy last spring—twenty-five packages entirely dead, queens and all. The buyer had paid a hundred dollars for this shipment. They were already ten days late and he had phoned the Customs every day. He was anxious to start work. Do you blame him if he refuses to put his hand in his pocket and pay out \$25.00 for expressage for something that is worth nothing to him? His wish is probably that all bees were in the bottom of the sea and his money back in his pocket. I wonder if there is a shipper in the South that would do differently if the case was reversed?

Now, will somebody tell us just what the receiver should do in a case of this kind? If it is easier to settle the claim by adding further expense, please tell us so, as we know little of what passes between the express company and the shipper. In the case mentioned someone has failed. It was either the shipper or the carrier; it was not the buyer. He had done his part, and to accept the shipment in a worthless condition would, in my opinion, complicate matters still further. If this is not the case, will somebody explain why? We are out after information. We know there must be many shippers who can give us this information, and it will help some in the future if we have a definite understanding.

Further along in your editorial you state: 'So the purchaser must take it for granted that the man he deals with is honest.' This is pretty well admitted when the buyer sends his money and pays for the goods before they are delivered. The buyer is always at a disadvantage in a deal of this sort."

L. T. Floyd, Manitoba.

Warmth For Breeding

Scientists do not agree as to whether the bee is a warm-blooded or a cold-blooded animal. Some hold that the bee has no body warmth and only produces warmth at will; others recognize a special degree of warmth in worker, queen and drone. But one thing upon which both scientists and practical beekeepers agree is the warmth of the cluster where the brood is reared, somewhere near the warmth of human blood. This may be recognized without a thermometer, just by opening the hive and putting the hand over the cluster in cool or cold weather.

Thus it is necessary to help the bees in spring by doing all we can to concentrate the warmth of the cluster in the brood nest. Our old beekeepers, the elder Dadant among them, recognized this so positively that they took great care to cover the brood nest. When a colony had a very small brood nest, in spring, covering say four frames only, they would remove the empty frames and move up the division board, placing some cushions of leaves or chaff in the space at the side of the brood nest, until the bees were able to cover more combs. This requires repeated visits to the colonies, once every week or every ten days. But it pays and may be done where the beekeeper does not have too great a number of colonies to care for. Similarly, it is important that the space above the cluster be well covered with a cushion or a blanket. If the colony is fed, the feeder must be surrounded with warm coverings, so that no heat may escape. I saw the great advantage of warm quarters when I happened to have a half dozen colonies to care for, located in the south wall of a hot-house. Those bees were ready for the crop ahead of any of our bees.

Perhaps some will think that this is too much labor,

too many details. But as James Heddon wrote, long ago: "Our business of beekeeping is a business of details." Indeed it is, and that is why the men who are accustomed to details, the men of careful occupations, like the jewelers, are first-class beekeepers, if they like beekeeping.

Our business is a business of details.

As Others See Us

Concerning the article under the above title in our January number by Professor Jager, we have received a number of letters of apology from British beekeepers assuring us that there is no such feeling in Great Britain as the words quoted would purport to show. These spontaneous expressions of friendship are delightful. We have always considered our friends across the water as real friends. The invitations to Dr. Phillips and his reception in the Old World indicate that there is a good feeling which should be encouraged. We offer our thanks for the kindly expressions.

This, however, should warn us of the possibility of hurting the feelings of others by too great patriotism. We see it cropping out once in a while in America, just as it cropped out page 82 of the February 24 number of the B. B. J., where a contributor says: "Insist on having only 'British made goods,' foreign junk serves no useful purpose" It is well to be patriotic, but no one likes to have his product called "junk," and we imagine that the man who wrote this would very much dislike to have any product of his called "junk."

Let us have the Golden Rule in practice, friends. It is so pleasant to be on good terms with others! Do we not all live on the same round earth?

Bee Magazines

Some thirty years ago there were eleven bee magazines published in the United States. Then the number decreased to five. We are getting on an upward slope again, for the following monthlies are now published in the United States, aside from several monthly bulletins published by state associations:

Dixie Beekeeper.
Gleanings in Bee Culture.
Beekeeper's Review.
American Bee Journal.
Beekeepers' Item.
Western Honey Bee.
Bees and Honey.
Beecause.
Nebraska Bee Tidings.
Wisconsin Beekeeping.
American Honey Producer.

When we find as many as ten or twelve bee publications in as small a country as France, we cannot be much astonished at our own abundance. There is an endless number of them in Germany. Evidently beekeepers love to tell their friends how to succeed, even if they cannot succeed themselves.

Kelloggs Advertise Honey

The Kellogg Company, of Battle Creek, Michigan, are to be commended for their campaign of advertising of natural foods. One of the posters, used to feature their "All-Bran," shows honey, raisins and a package of bran to be used in cooking. A plate of muffins and a plate of griddle cakes are shown in colors on the same poster.

Another shows apples, prunes, peaches, bananas, oranges and pears. These posters are very attractive and well calculated to interest the housewife in the products shown. Not only the beekeepers but the fruit growers as well will profit from the extensive campaign of advertising carried on by the Kellogg firm.

When mankind learns the advantages of cooperation, and all work together for a common end, by which all will alike benefit, progress will be rapid indeed.

Selling Honey In New York

By Colonel L. Brown

THERE is probably not another market in the country which receives honey from such a variety of sources as New York. Since it is the largest center of population and the leading port of entry for this country, it naturally attracts honey from any part of the world which has a surplus.

New York state, the middle west, the intermountain states, California and Florida, all contribute a part of the supply. Even more important are the West Indies, and especially Porto Rico and Cuba, whose products are duty free. Were it not for the 3 cents a pound duty levied against other West Indies honey, American producers would find their sales in New York greatly curtailed. European countries such as France and Greece ship limited quantities to this market, mostly fancy package goods in small lots.

The states closest to New York City ship a great deal of stock in small lots, but occasional straight carloads arrive from New York and Ohio. Beginning with Michigan and Minnesota, there is more of a tendency to ship straight carlots, and the intermountain states and California confine their shipments almost exclusively to carlots.

Records of honey receipts are kept in so many different forms that it is difficult to reduce them to any common basis. However, according to the best information available, New York uses from two to two and a half million pounds annually. Considered on the basis of the population which draws its honey supply from the metropolitan market, it amounts to less than a half pound per person, possibly not much over a quarter of a pound. And a very large percentage of the honey received is used for baking purposes and candy making, so the average family does not use more than a pound of honey a year.

Porto Rico is the largest source of supply, and receipts from that island amount to very nearly one-third of the total. Adding in the Cuban honey and the occasional lots of honey from the other West Indies and Mexico, they contribute approximately 40 per cent of the supply.

New York leads among the eastern states; most of the extracted buckwheat and much of the comb, regardless of flavor, originates there. However, it is doubtful if it ranks with either Idaho or Wyoming in volume of receipts. The intermountain

states and California supply about three-quarters of a million pounds annually, while Ohio, Minnesota and Michigan are each good for about one hundred thousand pounds.

The quantity of honey received from Florida is not very large, but it is interesting, since most of it is the white tupelo honey, noted for its resistance to candying. In this respect it even surpasses the sages, at least in the opinion of the New York trade, and it is actively sought for.

Every apiarist who intends to ship honey to New York should take careful note of trade preferences as to flavors and colors, and also to packages and containers. Packages are, if anything, more important than the flavor shipped.

Most of the Porto Rico and West Indies honey is of mixed flavors, is amber to dark amber in color, and is shipped in barrels. It sells considerably cheaper than the domestic product and hence has the call wherever a cheap honey answers the purpose. Bakers and manufacturers of the cheaper kinds of confections are the largest users of Porto Rican honey, but bottlers are able to work off substantial amounts of it by blending it with the better grades of lighter colored honeys.

Next to the West Indies product in the price and color scale is the buckwheat honey, most of which comes from western and southern New York and northern Pennsylvania. Bakers use considerable quantities of the buckwheat, but the largest outlet is the Jewish trade. During the spring and fall holidays the Jewish trade uses buckwheat honey exclusively. Most of it is handled in bulk, however, as they prefer to buy that way rather than in bottles. As a matter of fact, the percentage of pure buckwheat which is bottled and retailed is very small.

The clovers and sages make up the great bulk of the bottled honeys which New Yorkers consume. Clover is commonly blended with some other honey, such as sage, white tupelo, or even the Porto Rican, either to make a cheaper product or else to keep it from candying. There are a number of brands of pure clover honey on the market, but as a rule they do not command any particular premium. A limited amount goes to high class bakers, and much larger quantities to the better class of confectioners. Hotels and restaurants also favor the clovers and sages, as they have good flavor and have the light amber color

which the average consumer believes honey should have.

Not a great deal of orange blossom honey is received at New York, and practically all of it goes to special classes of trade, such as druggists, high class retail stores, and a few confectioners. Some of the very best California white sage is used in the same manner.

The Florida white tupelo finds its greatest usefulness in blending, for it does not candy easily. It is this property which makes it one of the more expensive honeys.

The limited quantities of French and Greek honeys are interesting because of the high prices they command. Only a few of the leading retailers carry them, and they usually command double the price of the best American honeys. Whether they are any better than our best flavors is a debatable question, but the retailers stoutly maintain they are, and there are sufficient customers who have enough faith in the arguments to buy the small quantities offered.

One of the curious characteristics of the average New York housewife is her predilection for small packages. Evidently the New York consumer wants honey in the most expensive form it can be purchased. The five- and eight-ounce bottles are preferred, while the fourteen- and sixteen-ounce bottles are a trifle larger than the average consumer wants. When it comes to the larger jars and the pails, they are very difficult to sell at any price.

Pound for pound, honey is immeasurably cheaper in the two-and-a-half- or three-pound jars and five-pound pails than it is in the small bottles, yet the consumer invariably selects the small bottle. Five-pound pails of honey sold all last winter from \$1.10 to \$1.15, and five-ounce bottles retailed at 15 cents. It would take sixteen five-ounce bottles to equal the five-pound pail, and the cost would be \$2.40, or more than twice as much per pound. The reason for the small unit purchases of honey are undoubtedly due to the fact that people regard it as a luxury or a medicine. Most people want a bottle which costs either 15 or 25 cents, hence the five- and eight-ounce jars.

It would take an extensive advertising campaign, perhaps more costly than honey producers and dealers can afford, to induce the metropolitan consumer to purchase the larger and more economical packages. For the present, the apiarist who attempts to market honey in New York

in five-pound pails is likely to find it a losing game.

The sixty-pound tins work out well because they are a convenient size for the bottler, baker and confectioner. It is doubtful if the apiarist will find it easy to bottle his own product and ship it to New York. The bottles may jar the caps loose in transit or the shipment may run into cold weather, and candy, or the labels may lack attractiveness. In any case the apiarist is the goat.

As intimated above, a very considerable portion of the honey sold in New York is blended so as to produce a uniform color and flavor. Such blended honeys are sold as "pure" honey, which is correct enough except that it does not adequately describe a blended honey. "Pure and Unblended" would be a good label to put on any honey which has not been mixed.

Blending does no particular harm except in those cases where a considerable quantity of cheap honey is added to a better product and it is sold at the price of the unmixed product. A blended honey does not candy so quickly, and for this reason it may prove beneficial to add some sage or tupelo to a clover honey.

Very little comb honey is used,

because of the extreme difficulty of shipping and distributing within the city. The wholesale grocers who handle extracted are practically unanimous in their refusal to touch comb honey. The breakage is considerable for the wholesale grocer, and practically all of it is sold by the distributors who make a specialty of honey. Retailers are not very enthusiastic about it, for they take heavy losses on it in one way and another. It is also a rather difficult product to keep, as it cannot be stored in a cold place, and most of the storages and warehouses are cold places.

Much care needs to be taken in preparing comb honey for shipment, and it does not pay to ship anything except a number one or fancy. Remember, it is strictly a luxury product and those who can afford it are willing to pay good prices for just what they demand.

The greatest opportunity for beekeepers to increase metropolitan consumption is in educating the public to the value of pure, unblended honeys and in getting people to buy in larger quantities.

Surely New Yorkers can afford to use more than a pound of honey per family per year.

writing of damaged condition and secure agent's notation of same on paid freight bill. This notice is more especially desired when it is impossible to determine the actual loss or damage at the time shipment is delivered. If the actual loss or damage cannot be determined at the time shipment is delivered, it is absolutely necessary that carriers be in a position to determine or verify the loss or damage at the earliest possible date, and the agreed loss or damage will no doubt to a large extent be dependent on the cooperation of consignees or parties concerned.

The claims that are delayed in adjustment or difficult to adjust, either on a satisfactory basis to carrier or claimant, are claims that are not promptly filed, properly supported, or on shipments that have been delivered in apparent good condition as far as carriers have knowledge, the first notice carriers receive of damaged conditions being the filing of a claim (two to six months after shipment delivered) in the form of a letter stating amount claimant considers he is damaged. The carrier receiving the letter referred to makes a detailed and extended investigation, but as no one has recorded condition of shipment or received complaint as to condition, and claimant is not in position to advise in regard to damage, amount, where or how determined, investigation develops very few actual facts and no records in support of same. The adjustment of claim on the very broadest basis possible from an investigation standpoint is embarrassing to carrier, and in a number of cases unsatisfactory to claimant. The avoidable unjust loss of claimant's goodwill is carrier's additional burden.

Carriers are required by law to adjust claims on the basis of legal liability. The investigation file must therefore show legal liability and support the adjustment of claim. Investigation files covering claims are subject to inspection by legally authorized government inspectors; for this reason and to protect carriers and claimants, the investigation files must show legal liability, verifying the loss or damage and the amount paid in settlement of claim.

More Smoke Fuel

I use fine chips to start my fire with. After it is well started I fill my smoker with pieces of mesquite wood about the size of my thumb. Use a large smoker and stuff in as many pieces as will go into the smoker and it will furnish all the smoke needed for half a day.

John G. Morris, Arizona.

Claims for Loss in Shipment

Important Suggestion, Endorsed by the Freight Claim Association, Comprising Practically All Carriers in the United States, Canada and Mexico.

By E. F. Anderson

Overcharge Claims

THE following documents should be submitted by claimant in supporting claim for overcharge in rate, classification or weight:

A. Original bill of lading, if not previously surrendered to carrier.

B. Original paid freight bill.

C. Original invoice, attested copy of such other evidence as may be necessary to prove the rate, weight or classification claimed.

D. Statement of claimant on standard form, showing how overcharge is determined with reference to published tariff or other authority for rate, weight or classification claimed.

E. When for any reason it is impossible for claimant to produce original paid freight bill or bill of lading, claimant should indemnify carrier or carriers against loss by payment of duplicate claim supported by original documents.

F. The absence of any of these documents should be explained.

Loss and Damage Claims

The following documents should

be submitted by claimant in supporting claim for loss or damage:

A. Original bill of lading, if not previously surrendered to carrier.

B. Original paid freight bill.

C. Original invoice or attested copy.

D. Statement of claimant on standard form showing how amount of loss or damage is determined, with such other evidence as may be necessary to substantiate same.

E. When for any reason it is impossible for claimant to produce original paid freight bill or bill of lading, claimant should indemnify the carrier or carriers against loss by payment of duplicate claim supported by original documents.

F. The absence of any of these documents should be explained.

It is always desirable to remember in the loading of shipments, the distance shipment is to move, also the stronger and more careful bracing required for long movements, because of the additional risk and handling necessary to transport same.

At destination caretaker or consignee must notify delivery agent in

Far Enough North?

By W. D. Albright, Beaverlodge Experiment Station

WRITING last winter to Mr. Frank C. Pellett, whose visit to the Peace River region is still green in my memory, I remarked that our bees were a little too active because of mild weather, and suggested that the chances of successful outdoor wintering might be better farther north. Shortly afterwards appeared an editorial squib headed "How Far North?" in which it was stated that "Albright lives about in the latitude of Wrangell, Alaska." This statement was only about fifty miles from the truth, but the challenge of the editorial spurs me to "tell the world" something.

Beaverlodge is 428 miles north of the forty-ninth parallel of latitude and about eleven miles west of where Herman Trelle grew the 1926 world sweepstakes wheat and oats.

In eleven years of keeping meteorological records, the lowest temperature recorded on the hill where the sub-station is situated was 52 degrees below zero. I shall be candid and admit that our recent studies upon topography as affecting temperature lead us to believe that in hollows it may have been twenty or more degrees colder. High land should be chosen for gardens, apiaries, and residences.

Last winter our lowest official reading was eleven below. It oc-

curred in October, and during the whole winter we recorded only twelve minus readings. Cars ran from January on. This year it is colder, but minus twenty is our lowest to date (writing just before Christmas).

In November, 1925, our eight colonies of experimental bees were packed with straw in two quadruple wintering cases. Mice invaded several, causing the death of one, probably dequeening a second, and disturbing one or two others. The seven were saved, but two would have been better united had profit been the sole object.

Brood was found upon examination early in March, and by the end of April the best colony had seven frames of it. At a rough estimate about 21,376 cells were then occupied with brood and eggs in that particular colony.

Except for one extraordinary occurrence, the summer was good to bees. In early June there was a four-day snow storm, followed by rain, giving a total precipitation of 3.24 inches. At one time as much as ten inches of soft snow lay on the ground. Cheechakos shuddered, but old-timers welcomed it. It checked the grasshoppers and soaked the sub-soil, helping to produce the marvelous 1926 crop of grain, one field of

wheat threshing as high as seventy-two bushels per acre, and oats away over one hundred.

In the midst of that one and only period of bad bee weather five packages arrived in a moribund condition from Alabama. One or two were queenless and all were badly wasted. However, thanks to George Neely's skillful ministrations, the count was saved and one of these packages, united with a handful swarm (one of the only two swarms we had this past year), achieved a season's surplus of 107 pounds. All the packages but one produced substantially.

Shortly before the June winter the colonies had been removed from their cases and lined up in the lee of the windbreak, a rough board case being slipped over each brood chamber, with a little straw tucked in between the walls. These cases, with the straw afterwards discarded, were left on all summer and seemed of advantage in protecting from weather changes, for it never surprised us much to find brood on the outside of the last frame. They were designed for late spring and autumn use, but are never amiss. They are not high enough to interfere with operations.

One colony was placed on scales. Somehow, as in other experimental apiaries, the beekeeper seemed to make a mistake and get the best one scaled. During August this colony made an average daily gain of 7.7 pounds, its best twenty-four-hour intake being 20.5 pounds, on August 23. From June 16 until September 4 there were only eighteen days in which no gain was recorded.

No extracting was done until the end of the season, and some was unavoidably left until considerable loss by granulation had taken place. The test colony was finally tiered up to a height of about eight feet and attained a gross weight of 550 pounds.

A novel experiment in requeening was tried with it, upon suggestion of C. B. Gooderham, Dominion Apiarist. It was restricted in space until swarming cells were started. All but one cell were destroyed. It, with the other brood, was raised above the honey supers, with an excluder beneath it and another above the depleted brood chamber where the queen was confined. A balcony entrance was arranged for the top story of this tenement. The queen hatched, mated, and commenced to lay. Unfortunately, during a manipulation, she was confined to a super of foundation, with her own brood and the balcony entrance above her. Neglected thus, she "re-



A 550-lb. colony of bees on scales. Best 24-hour net increase 20½ pounds, on August 23. George Neely, "The Keeper of the Bees," is a young Irishman 6 ft. 2 in. tall

duced" successfully and broke bounds through a defect in the excluder and was lost after contributing but a limited quota of brood. Nevertheless, by autumn this colony was so strong that it had to be divided for wintering. Each half was provided with a shallow super of stores and, even then, both hives were congested. In addition it should be noted that early in the season this colony had furnished considerable brood to build up weaker congregations. It had a wonderful queen and she was still laying well at the end of the season. Her daughter had promised to be fully as good.

After providing such heavy increase and stores to winter two strong hives, this summer colony had to its credit 281.5 pounds of honey, including a little comb honey figured equivalent to one and one-half

pounds per section. Had there been no granulation, the total might have been three hundred. The honey was exceptionally well ripened.

Summary

From a spring count of seven colonies (two of which were queenless, or practically so), supplemented by five half-dead packages, an apiary of sixteen colonies was built up and many combs drawn out. One hundred and seventy-two pounds of sugar was fed, chiefly for winter stores. The crop of honey was 1081.5 pounds extracted and 83 sections, the whole estimated equivalent to 1206 pounds of extracted, not counting considerable loss by granulation. The quality of the honey was excellent and it sold fast in competition with the Ontario product.

Perhaps we are not far enough north for best results.

East Texas Honey Sources

By William Lohr

MOST bees kept here are in box hives. Only a small part of the bees in Smith county and in the adjoining counties are in frame hives. There is a lot of honey shipped into Tyler, although enough honey can be produced around here to supply the demand. I sell my honey at 25 cents per pound in small quantities and at 20 cents in five- and ten-pound pails. Comb honey is in demand; very few people want extracted honey.

Smith county and east Texas in general is good territory for beekeepers. There is always an abundance of pollen as early as January 15 and as late as November. I believe east Texas has some ideal locations for queen breeders. Our earliest honey and pollen plants are the tag alder, redbud, maple, willow, fruit bloom, blackberries. Then comes winter huckleberries, from which we sometimes get a surplus. This honey, however, has a strong gooseberry flavor and is often mixed with persimmon and chinquapin honey. I use it mostly to stimulate colonies that were slow in breeding up. In the later part of May in some years the bees are unable to get anything and are in danger of starving.

By the first of June basswood begins to bloom and in favorable years we get fifteen to twenty-five pounds from this source especially if the end of the huckleberry flow and that of linden come close together. Cotton is a very rare source of nectar and is mostly mixed in with other honey. The year 1918 was the only year I got pure cotton honey. It seems that cotton produces honey in east Texas only in years when cotton gets a

good start in the spring and later is cut short by drought.

One of our best honey plants here is the partridge pea. In favorable years it yields honey from July 1 to September 1. The honey is of a golden color and of mild flavor. Horsemint, boneset, heartsease and goldenrod, although abundant, are not good honey producers here, but Spanish needle is a fine producer of fall honey. It blooms here in October and gives us a big force of young bees to go into winter. Other pollen

and minor honey plants are the oaks, gums, hickory, black locust, holly, haw, prickly pear, cow peas and bitterweed. Bitterweed is very abundant here in late summer, but the bees seldom work on it. Although there is much honeydew on oaks, mellon vines and cotton, bees do not gather any here. One fall cotton was just covered with a lot of honeydew, but I could not find a single bee gathering any.

My locality produces honey every year, although not in as large quantities as some other sections of Texas.

Another Contest

The G. B. Lewis Company of Watertown, Wisconsin, are offering prizes for the best honey fudge and the best batch of honey cookies. All contestants must enter before May 1, but there are no strings tied to the contest. You do not have to buy supplies or be a customer of the Lewis Company in order to be eligible. The object is to call attention to ways of using honey, and it is hoped that there will be many entries.

For the best honey cookies the first prize is \$100.00, the second \$25.00, and the third \$10.00.

The prizes for best fudge are \$15.00, \$10.00, and \$5.00. The same person can enter in both contests.

Recipes and full information can be had by addressing the G. B. Lewis Company, Watertown, Wis. Entries are open from April 1 to May 1.

Apiary in Schnell Hives



George L. Sauer, of Polo, Illinois, holding frames from one of the Schnell hives which form the bulk of his apiary. The frames are almost square, somewhat like the old American hives.



Field meeting of the British Beekeepers' Association, Luton, July 16, 1926. Left to right: E. F. Phillips, J. Herrod-Hempsall (editor British Bee Journal), Mrs. Phillips, Field Marshall Lord Methuen, W. Herrod-Hempsall, the Mayor of Luton, Mr. W. R. Reid (standing), Chairman of British Beekeepers' Association.

Visiting Beekeepers Abroad---England

By E. F. Phillips

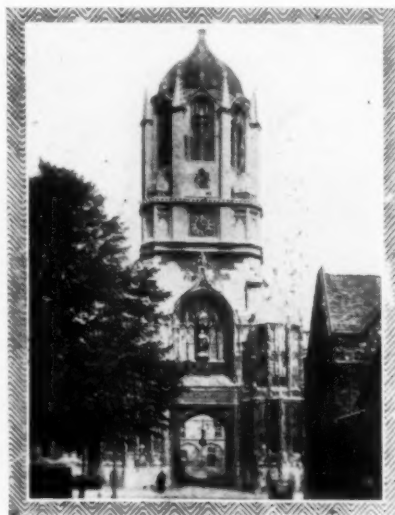
WE reached England on July 11, about the hottest day of summer, and felt that we were being given a warm reception. That afternoon and evening we wandered about London, but having neglected to take a guide book or map, we were promptly lost. The "bobbies" of London are noted for their courtesy and we found no exceptions in our efforts to get back to recognizable places.

The following morning Mr. James Morgan, editor of the *Bee World* and director of the Apis Club, called on us at our hotel to make plans for the later meetings of the club, at which I was to preside. While he was still there, Mr. W. Herrod-Hempsall, Apicultural Advisor to the British Ministry of Agriculture and Honorary Secretary of the British Beekeepers' Association, also came to make arrangements for trips and meetings which were planned for our enjoyment.

The same evening we went to Luton, where Mr. Herrod-Hempsall resides, and the following day we started on our drives. Through the courtesy of the Ministry of Agriculture, it was arranged that Mr. Herrod-Hempsall should conduct us to various places where we might see what is being done in beekeeping, and since he has been engaged in beekeeping work for many years and has traveled everywhere in Great

Britain, he was a wonderfully efficient guide and great help to us.

On July 14 we attended a small field meeting of the Apis Club at the apiary and home of Mr. B. C. Berkeley, Sonning Common, Read-



Big Tom Tower, Christ's College, Oxford University

ing, who conducts a department in the *Bee World* and who is advisor in beekeeping for the district about Reading. The night before was spent quietly in the home of Mr. and Mrs. Berkeley, and our friend Morgan was also there. On July 16 we at-

tended a monster field meeting given in our honor by the British Beekeepers' Association at the home of Mr. Herrod-Hempsall, Luton. Field Marshall Lord Methuen was in the chair, as one of the vice-presidents of the organization, the president, Mr. Cowan, having died two months previously. His worship, the Mayor of Luton, extended the welcome of that city, and as Americans unfamiliar with such things, we were much interested in the gold chain and great seal of office which he wore. Beekeepers attended this meeting from all parts of England and Wales. The weather was perfect, the crowd was enthusiastic, and altogether we all had a wonderful day. The following day we attended a field meeting of the Kent and Surrey societies at the home of Mr. Arthur M. Sturges at Eastbourne, on the south coast. Here were gathered about three hundred enthusiastic beekeepers, including Sir Reginald Tower, a beekeeper and former British Ambassador to the United States. In spite of the fact that all British beekeepers constantly malign their weather, we were again favored with a fine day and everybody had a delightful time. The next day, Sunday, was spent quietly with Mr. C. P. Jarman, editor of *Bee Craft*, at his home in Orpington, and with Mr. Burch, an American who has become an English beekeeper.

All of the following week was spent with Mr. Herrod-Hempsall on a tour through middle and western England, and to attempt a description of where we went and what we saw would require a full issue of this journal. Imagine, if you can, a trip which took us to places replete with history, among beautiful mountains, over vast productive plains—in short, through the heart of England. We visited an ancient Druid temple, dating back beyond recorded history, more recent but very old churches and cathedrals, old castles, abbeys, and other things which thrilled our every moment. On the return trip we persuaded our guide to take us to Stratford-on-Avon, the home of Shakespeare, and to Sulgrave Manor, the former home of the Washington family. So it was not all bees, in spite of the fact that bees were the motive of our trip.

After that week, we returned to London and then went to Newton Tony, near Salisbury, where we were met by the Rev. Mr. Benjamin Wright, whose writings on bees are familiar to all readers of the *Bee World*. We had a delightful visit with him and his family and were taken to Old Sarum, the Salisbury cathedral, and to Stonehenge. The date of the establishment of Stonehenge is somewhat uncertain, but it was probably about 1900 B. C., and before visiting it we had all the work of the exploratory excavations fully explained to us by Mr. Frank Stevens, curator of the Salisbury museum, who has devoted years to this study.

Then we went to Charlbury to visit Mr. C. B. Bartlett, an extensive beekeeper and a member of a charming family. Mr. Bartlett assured me that his only claim to fame in beekeeping is the fact that he has lost about 10,000 colonies of bees from Isle of Wight disease, a somewhat doubtful honor, but he is probably the most extensive beekeeper in Great Britain. I shall not attempt to give the impressions which I obtained regarding the Isle of Wight disease while over there, except to say that I am glad that we do not have it on this side, and am more firmly convinced than ever that we acted wisely in prohibiting the importation of adult bees when and how we did. At Mr. Bartlett's we met several of the important beekeepers of the country who had been invited there at the same time, so it was a jolly party. They then took us to Gloucester, where we attended a meeting of the Gloucestershire society, and that night we stayed with Lieut. Col. Stoney-Archer, one of the most ardent bee enthusiasts of the country.

The following day we were driven

to London in the Colonel's Buick, which felt like home, passing on the way through Oxford, Benson, where the Apis Club was formerly located, and down the charming Thames Valley. That evening we attended the banquet given in our honor by the Apis Club, and, needless to say, it was a delightful occasion. Mr. J. A. Tinne, M. P., was in the chair.

The next two days were devoted to the annual general conference of the Apis Club. The fact that this organization honored me by election to the presidency had served as our excuse for taking this glorious trip, and we were, of course, anxious to attend that meeting. They said that the presidential address was not bad, but I for one was glad when that part of the program was over, so that I could better enjoy the meetings. It need not be pointed out that for a beekeeper to go to a meeting in a country other than his own and to discuss beekeepers' problems has its dangers, for naturally I had no experience with beekeeping conditions in Great Britain and stood in danger of suggesting impractical things. This I tried my best to avoid.

The Apis Club is an organization of beekeepers quite unlike any other of which I have knowledge. Its primary aim is to encourage international cooperation among those interested in the advancement of beekeeping, and in this it has been perhaps more successful than any other organization with such a purpose. The official organ is the *Bee World*, founded by Dr. A. Z. Abushady, who is also the father of the whole movement. In a letter read at the meeting, the editor of the *American Bee Journal* spoke of the *Bee World* as the best paper that comes to his office, and in this opinion many are ready to join. It is now being ably edited by Mr. James Morgan, and, while the club and journals have had hard times financially, all the friends of international cooperation in beekeeping are hoping that these may be overcome and that the movement will have a bright future. Some excellent papers were read at the meetings and, quite aside from them, everybody there had a delightful and most profitable time.

It is perhaps dangerous to say anything about beekeeping politics in Great Britain, but since none of the beekeepers tried to hide the situation from me, there seems no reason why it should not be mentioned. Naturally an outsider has no business mixing in anything of that kind. It cannot be said that the most complete harmony exists throughout beekeeping circles in England, and the societies are not all working together in that fashion which they themselves recognize as desirable.

The beekeepers are split into various camps, and we tried to meet them wholly without any regard for those things—I hope with success. Even in any one organization there is not always complete harmony, and at the opening of the Apis Club meetings there was some evidence that a storm was brewing, a rather natural situation in view of the financial difficulties through which the club had recently passed. After a few heads had been bumped together, the men present made the marvelous discovery that they had nothing to fight about, and from that time on everything was delightful. Those differences of opinion simply indicate that beekeepers are much the same everywhere and that all of them are human.

There is, however, one phase of the "row" which cannot fail to amuse an American, and I hope that my good friends in Britain will pardon a mention of it. A considerable part of the disagreement arises from the advocacy of different hives. There is the British standard frame which has its advocates, while others insist that a small hive like that cannot care for the needs of a full colony. The situation is almost identical with that of an earlier day in this country, for there was a time over here when a mention of the word "hive" would start a word battle in any of our societies. We have happily passed that stage, so that hives are no longer considered as the essential for success in beekeeping over here. I have no doubt that our British friends will one day find out that they too have no reason to disagree on that question, but how they will get through their present disagreements is something which I cannot even guess. That the British will "muddle through," as they themselves so often express it, is beyond question, for it is the characteristic of the people that they are not daunted by such difficulties.

Immediately after the Apis Club conference closed we went to Harpenden to spend Sunday with Mr. D. Morland, who visited this country last spring. He is connected with the Rothamsted Agricultural Experiment Station, probably the best known institution of that kind in the world.

The following day we went to Cambridge, and Mr. Morland, an old Cambridge man, went also to act as our guide. We saw that wonderful university under the most perfect guidance and with the best possible weather conditions, attended the local honey show and met a lot of the beekeepers and enjoyed all of it. Among other pleasant things, we punted on the Cam in correct student style, and that evening I "dined in hall" in Clare College, a privilege



King's College and Senate House, Cambridge University

which comes to few tourists, even though they are connected with an American university. After the dinner we spent a delightful evening with the "dons" of the college and, in fact, had such a delightful time that I forgot an engagement which I had with some beekeepers that evening until almost too late. This was, I believe, almost the only time on the trip when I missed an engagement, and I hope that my apologies were accepted.

After two days in Cambridge we returned to London and that evening had the privilege and honor of dining in the House of Commons with some members.

The following two days were spent in Oxford, where we were again guided by Mr. Morland and his sister. Morland's home is in Oxford, but he went to Cambridge, so he knows both universities well. When we were there the British Association for the Advancement of Science was opening its meetings, and the first evening we happened to be down in the town when H. R. M. the Prince of Wales arrived to deliver his address as president of the association. Many of us on this side saw the prince on his recent visit, and I think that we have almost as high an opinion of him as his own countrymen have, which is praise indeed. We were not able to get seats in the hall to hear him deliver his presidential address that evening, but we did hear it by radio, and it was an excellent address. It was rumored later that the royal family had a lot of fun with the prince while he was trying to prepare an address suitable to such a distinguished audience.

After Cambridge we returned to London, where we hastily tried to catch up on the things there which we had previously missed. One incident is worth brief mention: One day we lunched on the Strand near Trafalgar Square, and on leaving the restaurant we ran into another member of the Cornell faculty, and his wife. We knew that they were somewhere in Europe, and we met them by accident in the busiest place in all the world. But then if one were to stand on that corner and watch, he could see the whole world and his wife go by.

We closed our visit to England on August 11, a busy month and one never to be forgotten. I almost exhausted my adjectives in telling of

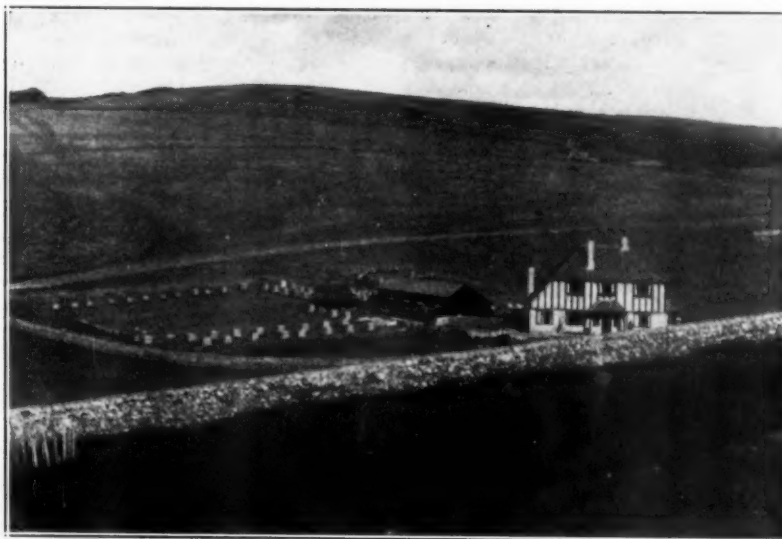
our thanks to the beekeepers of Switzerland and France, but all that has been said applies equally to our English friends. Their reception was a different one, the things which they planned for our enjoyment and instruction were unlike those which we had in the other countries, but back of all of it was the same kind thought and the same deep interest in what we American beekeepers are doing. We want to go back again to Switzerland, to France, and to England—and the trip among the Scots still remains to be described.

Preventing Rust in Feeders— Question Answered by Morley Pettit

Question—I would be very much obliged if you will tell me what you recommend as the best way to treat the inside of bee feeder pails to prevent rust.

Answer—The companies making lithographed honey pails in Canada put a finish of lacquer on the inside. It makes them the very best for honey and would prevent rusting pretty well if anyone were using them for feeders. I have some plain tin pails which have been used as feeders since 1912. They got pretty rusty at first and I lined them with paraffine wax several years ago. Perhaps it was not necessary, but, with the idea of keeping the wax from peeling off, I mixed a little cup grease with it, and it has kept its place well, except where very hot syrup has melted and brought some of it to the surface. Still enough seems to have stuck to prevent rusting.

The wax was applied to the pails smoking hot. After being washed and dried, the pails were set on the



Apiary of Arthur M. Sturges, Eastbourne, Sussex, on South Downs

top and in the oven of an old cook stove with a slow fire. Some wax was placed in three pails and allowed to melt and begin to smoke a little. Then the operator, wearing an old pair of leather mits, picked up the first pail containing wax and turned it around until the whole inside was smeared, finally tipping it over an empty pail in position for the wax to drain down the seam into the empty. The second pail containing wax was lifted, turned and tipped to drain into another empty. The third was treated the same, and by that time all but adhering wax had drained from number one, which was then ready to set aside. The pail which received its wax might be called number four, and so the series would be continued and each would drain out all liquid wax without wasting the operator's time. Of course, a very slow fire is needed in the stove, as the process is dangerous on account of the inflammable nature of wax.

We used to wash all our feed pails every fall before putting them away, but, like using a lawn mower in the apiary, and other desirable but unnecessary operations, this has been dispensed with in the interest of reducing costs. Canada.

Paper Container For Candied Honey

From F. H. Steele, of Richford, New York, we received a half-pound paper package of granulated honey. His comments follow:

"The company who make the package sent to you also make several smaller containers, one holding twelve ounces granulated honey, one holding sixteen ounces, also one of the same type you have, holding twenty-four ounces. Very probably the two smaller containers will sell in larger towns through chain grocers. However, the 2½-pound container is small enough for the trade in smaller towns and the country where they have been buying five- and ten-pound pails. While they buy two and one-half pounds only at one purchase, I find the average consumer's repeat orders double consumption of granulated honey in paper containers."

(The above letter is of importance, as it suggests methods of putting up honey in less expensive packages. Glass jars are thrown into the garbage pile, after the honey is taken out. But they cost something like a third of the value of the honey. It makes it more expensive to the consumer or less profitable to the producer. It is also important to make honey more attractive by its lower price in large packages. So we must arrange to attract the demand by

inexpensive packages, that the consumer may be induced to use more. We do not hear of housekeepers buying sugar by the pound or half pound. Neither should they buy honey in packages of less than five pounds. Let us keep these matters in mind, for America should consume ten pounds or more of honey per head, annually. When this happens there will not be bees enough in the country to supply the demand for honey.—Editor.)

Selling More Honey

By Lyle C. Osterhout

I keep bees and sell them. I also sell their products, as well as supplies to other beekeepers. Last season my bees produced several thousand pounds of the finest kind of white clover, sweet clover and Hubam honey imaginable. Other beekeepers produced some also. The stores were filled with honey at 10 cents a pound, which cost the consumer 20 cents. My honey graded "fancy" to "extra fancy" and I resolved to get a quarter for it or keep it.

The County Fair gave me my opportunity. I asked the secretary how much he would pay me to put up a real honey and bee exhibit. He thought I ought to pay him. Finally I agreed to fix up a display for the privilege of selling honey on the fair grounds.

I fixed up a glass observation hive which contained a brood frame with young bees just emerging, a number of drones and a queen. I packed my honey in individual containers and left some open to display. The hive of bees drew the crowd. The sight of the clear white capped honey did the rest. However, I didn't want any dissatisfied customers on account of the price, so I printed the following sign:

You can buy honey uptown for twenty cents. This honey is twenty-five cents.

But

Every carton weighs one pound or better.

No smoke was used in the hive.

It is absolutely fresh.

Take home at least a pound.

They did. Many took a half dozen boxes, while the largest sale was sixty-five pounds to a man who had nine sons who all liked honey. He also gave an order for a sixty-pound pail of extracted honey.

One of the selling aids was Clo-Clo, the National Health Clown, who gave the children talks on eating for health. He gave quite a boost for the use of honey, urging the people to substitute honey for sugar in every case possible. Nebraska.

Catching High Swarms

By Hy. W. Sanders

On page 17 of January number, the article by L. H. Cobb on "Getting Those High Swarms" reminds me of a useful device employed by that veteran beekeeper, M. H. Mendleson, of Ventura, California, with whom I spent one season.

He used to have in several places around the apiary bushel baskets, the same as used for apples and other fruit, but fitted with strong wire hooks so that they could easily be hung to the limb of a tree. If, while we were working, we saw a swarm, we simply took the basket and hung it in the tree close to where they were clustering. In half an hour they were clustered in and on the basket and could be gently unhooked and carried to a hive for swarming.

In case of a very high swarm, a long bamboo pole was used. It had a hook at the end of such a character that it could be used to elevate the bushel basket and hang it on a limb. I have seen Mr. Mendleson get a swarm from the very top of a tall eucalyptus tree by climbing to the top of his longest ladder and then using the bamboo pole. When the pole is used, care must be taken on account of the leverage caused by the weight of a large swarm. We used to try to get under the swarm, so that the basket could be unhooked and gently lowered until the whole affair, basket and bamboo, was easily under control.

Your footnote mentions an old comb, and doubtless the plan could be improved by fastening an old comb in the top of the basket. The bees never failed to cluster on the baskets we used, probably because they had been used many times and retained the odor of the bees. If a new basket were used, I think the comb fixed to it is a good idea.

One of the good points about the basket is that the swarm may be carried anywhere in the apiary. The big bushel basket gives them plenty of foothold, and we never had any trouble with them going back to the original clustering place.

In case the cluster is already formed, the procedure is just the same. Hang the basket nearby, or below, and give the bees a jar. The cluster will fall and break, and when it is finally reformed it will most likely be on the basket.

A still better way of handling swarms is not to have any, but to use big hives, plenty of room, and the honey extractor.

California.

Personal Recollections of the Editor

MY BOYHOOD DAYS

SOME subscribers have expressed the wish that I give some recollections of my boyhood. I hesitate to do so, but perhaps it will please more people than I expect. So here goes:

I was born in eastern France, in the old city of Langres (pronounced Langr), a fortified city, built in the time of the Romans, on the top of a cliff, with walls or ramparts twenty to forty feet in height, seven gates with arched entry ways, drawbridges, moats, towers, loopholes, etc., just as they built in the days when war was a hand-to-hand fight. The city is about 600 feet above the surrounding country, just near the source of the River Marne and situated about twenty miles south of Chaumont, where Pershing's headquarters were located during the great war. I was told that, for a while, there were more Americans there than native people.

To evidence the great age of the city it is only necessary to state that a gate to it, which is now walled up, was built by Marcus Aurelius, nearly 2,000 years ago. It bears an inscription, in Latin, cut into the stone of its arch.

There is not much beekeeping to this. In fact, I was a city boy; I learned to read, I am told, when I was four years old, farther back than I can remember. I had very little country experience, but I got a little inkling of what beehives and combs were like when I was about six years old. My father had a small orchard and garden where he kept half a dozen hives of bees, just below the walls of the city. During one spring, I believe it must have been about 1857, there was a late frost of great intensity. Everything in the fields and the woods was bitten. The avenues of basswood trees that surrounded the city, and which yielded much honey, had their tender stems and clusters of buds frosted and hanging down in a pitiful manner. My father's bees had a great deal of brood and should have been fed. But he was away on business, and when he came home he found that every colony had starved to death. The hives were of the Debeauvoys style, with tight-fitting frames and doors on the side, to enable the beekeeper to handle the combs. During that summer I had them for playthings, whenever we spent a few hours at the out-of-town orchard. My father had been thoroughly disgusted with beekeeping and had no idea that he would, later, make beekeeping his sole occupation, in America.

America! That was a country of romance, for we read the translations of Fenimore Cooper's novels, and that country, across the seas, appeared as a wonder, with its Indians, its buffalos, its immense Mississippi. Little did I dream, when we were taught that it was the longest river in the world, that I would some day keep bees along its lowlands.

Let me tell you of my first acquaintance with bee stings. My grandfather lived in the little village of Vaux, about twenty miles south of our city, in Burgundy, a splendid country for grapes and wines. He was a country physician; he had graduated in Paris and was fond of natural sciences. He had a very pretty home and garden, as homes go in those countries of old stone residences. We spent at that home three or four weeks of our vacation, with the other grandchildren, half a dozen of us, for he had four sons married, three of them with families.

It was from him that I learned that butterflies were called "lepidopters" (scaly wings), house flies "dip- ters" (two wings), beetles "coleopters" (sheath wings), and bees "hymenopters" (membranous wings). We grandchildren had a fancy for making collections. We began by collecting snails, shell-snails, of which there was a great variety, of different sizes and colors, from the large edible gray snail to the small yellow, brown and pinkish snails, that are always plentiful in a region of plentiful moisture. But snails were rather repulsive, always leaving a slimy trail behind them. On the other hand, insects were, most of them, very pretty, especially the butterflies. So we began collecting butterflies, June-bugs and other beetles, then bees and wasps. I very plainly remember the first honeybee I ever caught. I had been told that bees had a sting, but I was using my handkerchief and felt quite safe. I grabbed a honeybee on a mignonette blossom. Of course it had to be killed, and when I pressed it, in spite of the handkerchief, I felt a fiery sensation in my finger. That was my first sting. I was ashamed to say anything about it, but my cousins saw me make a wry face and guessed what the trouble was. They laughed and told Grandpa. He said: "You can catch bees and need not be stung, but you must not press them, just hold them captive." Upon this he showed us how one could catch a bee on the wing, with a quick gesture, without danger, if careful.

My next experience with bees was from a hive in an old skep, along the shore of the little river, the Badin, which flows through the village, at the lower end of what used to be my grandfather's garden and orchard. We were after crawfish, all the grandchildren, with an uncle. I was carrying the net containing the catch. I always had a great love for experiment, and as we passed the straw hive the thought came to me to experiment on what the bees would do to the crawfishes in the net if they were put in touch with them. So I carefully laid the net of crawfish across the entrance of the hive and waited a few seconds, then removed it. But the bees did not attack those cold crawfishes; they appeared to divine who was to blame and came for me. My uncle came to my help and had great difficulty to rid me of the angry bees, after two or three of them had stung me. We moved away along the stream and I thought the trouble was over, when, after a few minutes an angry bee stung me again. Now, I was side by side with my cousins, but that angry bee knew very well who was the guilty boy, although several of us, of the same size, were together. So it would be difficult for anyone to convince me that bees do not see objects distinctly, as some people would have us believe.

Perhaps I might tell also that I was made sick by overeating of honey, once during my early days, and that it took several years to get me to like it again. I had gone one afternoon, with my father, to a village in the valley on the north of the city, a village called "Vieux-Moulins" (Old Mills). We called on an old woman who showed herself very anxious to treat me well. She cut for me a big slice of rye bread and covered it with honey. It was only about an hour after lunch, so that my meal was not yet digested, and the result was as stated. I believe that, in many cases, people whom honey sickens have been made sick by overeating it, or by eating it on a full stomach. One can overeat of candy, after a hearty meal, and no immediate bad results will follow, but this cannot be done with honey. Thus the danger of any permanent injury with this sweet is less than with any of the other sugars, since the stomach will be surfeited and will reject it when taken at an improper time.

The above mentioned experiences are about the only ones which I re-

member of my youngest days, having anything to do with bees. We lived almost constantly in the city; I was a regular attendant at the college, where, after three years of preparatory schooling, a boy was put into Latin, ancient history, rhetoric, and mathematics. It is true that, with the metric system, children have much less trouble with arithmetic than with the old English methods of weights and measures, since the entire system is based upon decimals and consists of only five words and eight prefixes for multiples and fractions. I had good opportunity to prove this, since I was taught the metric system before we came to this country and did not study the irregular and monstrous system of English weights and measures until I got into the local school here. The proof that the metric system should be adopted is shown by the use made of it by scientists, who have long ago ascertained its great simplicity.

As the world advanced in methods of transportation, our old city lost

its influence and became a back number, for it was out of the reach of railroads. The Eastern railroad, which was built past it, in the fifties, did not attempt to scale its walls. The railroad station was located over a mile away and the city slowly lost its trade, which was not to come to it again until they built a cog-wheel, inclined plane railroad, like those that scale the mountains of Switzerland, such as the Rigi, Pilatus, and those of America, like Pike's Peak, Mount Lowe and many others.

Meanwhile, my father, disgusted with the slow conditions which business had to face on this high cliff, concluded to come to America, with the intention of growing grapes, for he had no thought of beekeeping then. He had a friend in this vicinity and, leaving his family behind, came to Hancock county in 1863.

In another article I will speak of our early experiences in the country of Indians and buffalos, which was so quickly to change to the country of millionaires and skyscrapers.

Harboring American Foulbrood Is Costly

By E. G. Carr

ALTHOUGH there is not an exact parallel, it has always seemed to me that American foulbrood control is quite similar to bovine tuberculosis control. To be sure, it cannot truthfully be said that *Bacillus larvae* germs are harmful to human health and therefore their control is a public health consideration, as is the control of bovine tuberculosis.

Recently I heard Dr. McNeil, chief of the Bureau of Animal Industry of the New Jersey Department of Agriculture, say: "In the beginning the work of bovine tuberculosis control was primarily a public health measure and was started on that basis. Now," said he, "although it is still a matter of public health concern, it is, from the herdsman's standpoint, and so far as his best interests are concerned, an economic measure."

I am pleased to see the economic side of American foulbrood eradication pointed out in the October issue of the American Bee Journal by Mr. M. G. Dadant. This, it seems to me, is the view that beekeepers should take of the matter.

So far as my observations and personal experience in New Jersey go, some revision of the figures might be made to fit conditions in this state. I do not wish to detract from the figures of the cost of harboring American foulbrood. Rather, I would increase the total amount. American foulbrood surely beats the "boarder cow" as an expense.

I believe the figures for outright

loss of colonies would apply equally well everywhere. While seven and a half dollars might be considered by some persons as a high valuation for the bees themselves, it might be borne in mind that whatever is salvaged from a colony which has died from American foulbrood costs all it is worth when salvaged.

For this state as a whole an entire loss of crop could not be charged against all colonies infected with American foulbrood, provided the beekeeper is unwise enough to put on the market honey produced over an infected colony.

Recently I saw a two-story colony in which diligent search revealed but two cells of American foulbrood. This colony had at least fifty pounds of surplus honey on it. The hives, bees and honey were all burned. This is the method which is being adopted by our best beekeepers as being the most economical and the most efficient.

Three dollars for the cost of treating a colony infected with American foulbrood seems low, even when efficient salvaging methods are used. However, there is one item of expense which is not mentioned by Mr. Dadant. This is the cost of more frequent and more detailed examination of the apiary, which is, or should be, made when American foulbrood is in the apiary or is known to be in the neighborhood.

Many times a mere glance at the entrance or over the tops of the

frames suffices when the disease menace is not in the locality. Then there is the restriction on many operations which are entirely practical and advantageous when no disease is feared, but which are prohibited when disease must be in mind in every operation in the apiary.

Besides the expense of the more frequent and more detailed examinations there is the item of loss of nectar occasioned by such examinations, especially during a honeyflow.

This was shown by Mr. Eckert at the Root-Langstroth Memorial meeting to be considerable. Although the disturbance of colonies by Mr. Eckert was considerable, it is no doubt true that even an examination which will satisfy the careful beekeeper as to the presence or absence of disease in a colony will result in some loss of honey.

It is hoped that beekeepers everywhere will see the economic need for the eradication of American foulbrood, for eradicated it can be as soon as all beekeepers will do their part.

As pointed out by Mr. Dadant, it is good business to appropriate sufficient funds properly to care for bee disease eradication work. After all, it is primarily up to the individual beekeeper. He must take every possible step to eradicate disease from his apiary and then secure protection against those who will not do the right thing, by securing legislation and appropriations to support a disease eradication program.

New Jersey.

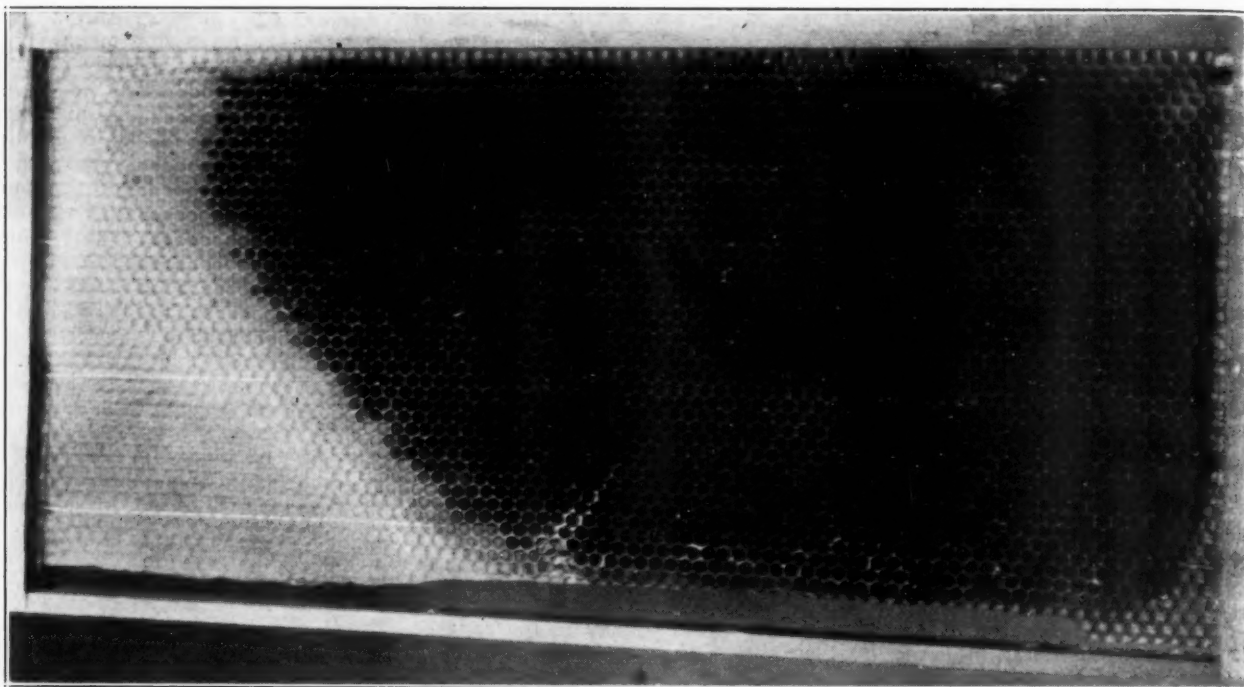
Smoke For Bees

Talk about "perfect smoke for bees," or the ideal fuel for the bee smoker. But no beekeeper has found that until he has tried sumac bobs.

Previous to the using of them, I used punk wood taken from the decayed trees of the sugar maples. And verily, I thought that I had the "perfect smoke for bees." But with the introduction of the bobs, my punk wood soon found its way into the stove, and if Jay Smith and Victor Vinson would give the bobs a trial I think their oil-soaked corn cobs and rags would soon follow my punk wood.

The smoke from the bobs has rather a pleasant odor and is not offensive and rank like smoke from oil-soaked cobs or rags; yet it quiets the bees. Of course, tobacco smoke is better for cross bees. The bobs do not foul your smoker or go out the same as other fuel. The discovery of the use of the bobs for smoking bees is another man's, not mine. I have forgotten his name.

A. M. Bridge.



Comb partially drawn. Notice two lower wires through base of cells

The Problem of Sagging Combs

By Leslie M. Nordholm

IN the realm of beekeeping there has been, of late, an indefinite number of ideas and formulæ advanced regarding the kind of full sheets of foundation to use to secure perfect combs of worker cells. Full sheets of foundation have been proclaimed the panacea for perfect combs. When we come right down to brass tacks we find that there are several factors involved in the production of perfect combs over which the beekeeper has control and which are entirely independent of the kind of foundation that is used.

Such factors as nailing and wiring the frames, inserting and embedding the foundation, storage and care of both the frames of foundation and combs are, in themselves, purely mechanical. Success in these operations depends upon the skill and ingenuity of the individual beekeeper. Much depends on the thoroughness with which he performs each of these tasks—simple as they may seem, though fundamentally essential in the perfect comb.

Another factor, perhaps the greatest, may be termed the manipulation of the full sheets of foundation within the hives of the bees. Success with this factor depends on the beekeeper's knowledge of bee behavior.

Properly constructed frames are the groundwork on which good combs are built. Merely a few small nails

used in their assemblage will not suffice. Fairly large nails and plenty of them will make the frame strong and substantial to withstand all the strain and abuse that it does ordinarily receive.



An ideal brood comb

Every beekeeper has his own particular method of wiring which he considers to be better than the other fellow's. No matter what method is used, the wires must be tight. Often when the wires are drawn tight they will shortly sink into the wood of the end bar and thus become loose. To get around this difficulty some beekeepers place small metal eyelets into the holes for the wires in the

end bar and thread the wires through these. Still others drive small nails into the edge of the end bar, near the holes, and allow the strain of the wires to come on these nails.

Full sheets of foundation should be securely fastened to the top bar. Some of the small nails that are commonly used in the wedge are practically useless. Larger nails should always be used. Five nails in the wedge are not too many to hold the foundation securely.

The embedding of the wire into the foundation is important. To prevent any possibility of the wire being exposed in the bottom of the drawn-out cells, it should be embedded into the very heart of the mid-rib of the foundation. The electric embedder that embeds only one wire at a time is much too slow for some beekeepers. They prefer to embed the wires of the entire frame at one operation. As a result some of the wires become too hot and cut entirely through the foundation, while others are embedded perhaps only half the distance across the frame, and some may not be embedded at all. By using the single-wire embedder, although it takes a little more time, a thorough job will be the result. A row of cells across a brood frame pierced by a wire at their base will never be used for the rearing of brood and will reduce the capacity

of that frame by just so many cells.

The practice of preparing equipment for the coming season during the winter months is all well and good, except the work of placing the foundation in the frames. Foundation that is left for any length of time in the frames will bulge out and become warped. A perfect comb can never be built from a sheet of warped foundation. The ideal frame of foundation that is to be given to the bees is one that is as straight as a die. Slamming and banging the hive bodies full of frames of foundation cause the foundation to work loose from the top bar. It behooves the beekeeper to take care of his future combs by using good judgment in the care and handling of the foundation after it has been placed in the frame.

Every beekeeper knows that the best and most perfect combs are drawn out when used in the supers at a time of an increase in the honeyflow. By using the hive body as a super every cell is drawn out and the comb is fastened securely to each end of the frame. These perfect combs can then be worked into the brood chamber to be used as brood frames after the honey has been extracted or during the following year. In order to get more of these perfect combs, the bees should be given full sheets of foundation at the start of the honeyflow and drawn combs at the end. Bees working on foundation during a decrease in the honeyflow will draw out only as many cells as they need to store the nectar. When there is little nectar coming in, partially drawn combs will be the result. By giving the bees drawn combs at the end of the flow more honey will be stored, because none is consumed in the production of beeswax for the comb. In a few years enough perfect combs will be secured to fill the brood chamber and the rest can be used for storage of honey in the supers.

The beekeeper who uses the Modified Dadant or the Jumbo hive will find that he can get more perfect combs from foundation by using some of the deep bodies as supers during the increase in honeyflow than he can by trying to get the foundation drawn out in the brood chamber.

In establishing a new colony from package bees or from a swarm and using full sheets of foundation for the combs, each additional sheet should be given only as needed. Some beekeepers divide the brood chamber and here insert a frame of foundation. The wax producers and comb builders start at once to draw out this foundation for the queen. In building up colonies the common

practice is to add one sheet of foundation about every eight days, depending on the season of the year and the honeyflow. If many sheets are added at one time the bees will draw out into comb only as much as is needed to satisfy the brood rearing capacity of the queen. The foundation near the bottom bar, and especially in the bottom corners of the frame, will not be drawn out. Bees will gnaw holes in foundation if it is given them in large quantities. If these sheets are later drawn out the holes will be patched with drone size cells. The beekeeper, on looking into the brood chamber, will wonder why there are some drone cells when he gave the bees worker foundation.

A comb that is completely drawn out and fastened to all sides of the frame is one that is going to withstand a great deal of strain. It will hold the load of honey or brood and will not sag, especially if it is well wired.

Sometimes the combs, during storage over winter, become cold and crack. When placed in the hive the

following season the bees repair this damage, seal the cracks with beeswax, and the comb is again almost as good as new. Almost, because when the bees repair this damage they simply fill the cracks up with beeswax and do not draw them together as they were before. If these cracks are through cells, then these cells will be enlarged and not the size of other worker cells. They have the appearance of sagging cells and not true worker size, and the queen, if she lays in them, will, in all probability, lay drone eggs.

And so we find that the panacea of perfect combs does not lie alone in the use of full sheets of foundation, for the problem of sagging combs has more factors than the use of any one kind of foundation. Careful construction of the frames, skill in the inserting and embedding of the foundation and a knowledge of bee behavior in order to manipulate the frames in the hives to get the best results, all go toward securing perfect combs that do not and will not sag or stretch.

The Faculty of Reasoning Among Bees

By R. Couallier

Chief Editor of "La France Apicole"

I READ with great interest the articles which appeared in the American Bee Journal upon the faculty of reasoning among bees. I do not wish to take sides in the discussion, especially with such able people as Latham in America and Baldensperger in France.

However, I wish to consider the particular case mentioned by Allen Latham in his first article in American Bee Journal, February, 1926, and criticize his explanation, which, to my mind, is rather far-fetched and not based upon the scientific principles which should guide a conscientious beekeeper.

Here is the case: A colony of golden bees, very active, shows itself inclined to robbing, especially concerning nuclei weak in bees. The robbers come to the entrance and, when seized by the guards, instead of trying to escape, take a humble attitude which enables them to be kindly considered by the occupants of the nucleus. After they are accepted, they establish themselves in great number as entrance guards, and from that time on their golden sisters are permitted to enter into the robbed nucleus.

Now the observer gives this explanation: "Seeking new sources of nectar and smelling its odor in weak nuclei, these bees try to gain admission. They are not robbers and so

do not try to escape. It may easily be supposed that some races of bees, where the development of robbing is easy, may have contracted this humble method until it becomes instinctive. As some time passes before other strange bees may penetrate within the hive, they lose their viewpoint as to their entering the hive and follow their other and stronger instinct, that of guards at the entrance. When their sisters come from the other hive, in quest of plunder, there is no hesitancy in admitting them."

This explanation is very ingenious, but it is not any more rational than the Baldensperger proofs sustaining the reasoning power of the bees, which Latham criticizes. It is especially weak in its foundation.

The recent observations of Rosch on the distribution of labor in a colony of bees, which I consider as of capital importance in the mysterious interior life of the hive, inform us that, from the time when the worker leaves the interior to take her place among the field bees (the robbers are only field bees), it retains this position as long as it lives. The labor of entrance guard is assumed by bees during the third week of their life, when they are no longer young enough, physiologically, to serve as nurses and when their age is not yet far enough advanced

to induce them to become field workers. Rosch never observed, in normal conditions, either harvesters or newly hatched workers watching the entrance. For my part, I would very readily accept the theory which makes an unchangeable law of the labor, bees are to perform as to their age. It does not seem at all rational that a field bee, even when she becomes a robber, when once upon that course, should change the purpose of her existence and return, for the good of the cause, to the function of guard, for which she is no longer suited.

If we must admit some hypothesis, since we are in this range of discussion, I would more readily believe that the strange bees observed in the case cited, and which presented themselves at the alighting board of the nucleus, were not harvest bees, and therefore not robbers, but only bees that had reached the stage of nectar receivers, pollen packers, house-cleaners, etc., the last stage of hive confinement, during which reconnoitering flights are taken occasionally, more or less frequently and to a greater or shorter distance. Their humble manners before the guards of the nucleus where they seek admittance are thus only the manners of bewildered young workers. Their ready acceptance by the guards would also indicate that the latter recognize in them bees that have not yet attained the stage of field bees, thus inexpert at the task of robbing or honey harvesting, and therefore inoffensive. I presume that bees must be able to recognize the age of their kind, to a certain extent, just as human beings, and perhaps better than human beings recognize it in one another.

This would indicate how irresistible is the physiological law of age, since after having been accepted in the new hive, they would continue in that hive the regular occupation of bees of their age, as guards, which comes immediately after that of house-cleaners and previous to the age of gatherers of pollen, propolis or honey.

In June last, I had the pleasure of visiting with that interesting and prodigious talker, "Pere Baldens," during the two days which I had the honor to spend in his company and that of Dr. Phillips. Baldensperger is of the same opinion as myself upon this: that in an apiary the bees which make mistakes as to the location of their home are much more numerous than one could imagine at first sight. Personally, I have introduced, into one of my apiaries composed entirely of common bees, a colony of brightly-colored Italian bees, easily recognized by their light color. At the end of a few weeks I was very much

surprised to find bees of this race not only in the neighboring hives, but in nearly all the colonies of the apiary, working at the labors of the hive as if it was their own, and without apparent desire of returning to their mother colony.

That the golden bees mentioned by Mr. Latham could have possessed a special propensity for robbing is probably undoubted. That the entrance of their sister robber bees should have been facilitated by the

presence of these misled younger bees, as guards, looks probable also. But that "some strains of bees, through long environment where robbing was easy, might contract that sneaky behavior until it became instinctive," allow me to doubt, or at least to suggest, that such an explanation is more of the domain of the imagination than of that of scientific observation, such as our masters in modern beekeeping, your countrymen, have pointed out to us.

Remarks On Marketing

By Lyle G. Osterhout

THE most interesting subject in the world to a beekeeper who has his storeroom full of honey is the question of marketing.

There is a simple answer to this question: The beekeeper can take his supers of ripened honey from the hives or honey house, load them onto the train and ship them to one of the big wholesale honey concerns. If the product is strained honey, it may be shipped in large containers.

This method is used by many large producers. The beekeeper gets from 6 to 12 cents for his honey and in the course of a few weeks he sees this same honey on display at the grocery store with the price running anywhere between 25 and 50 cents. There are many legitimate reasons for this spread, as anyone who has marketed his own honey well knows. In communities where there are few consumers this way is well enough, but where there are people enough to consume all the honey made, it seems a great waste to ship the product out and back again. The bee man is tempted to get a little of the advance for himself to help pay him for the time, labor and money invested.

The honey producer must remember, however, that he is dealing in a commodity that is just beginning to get out of the luxury class and into the list of necessities along with butter, eggs, etc. In marketing honey the future has to be considered. If these big central markets are going to spend their profits in making honey as popular as sugar, then every beekeeper who expects to stay in the business ought to patronize the big dealer. That such a thing could happen is not at all improbable, for honey is about as far ahead of sugar for nearly every purpose as sugar is ahead of glucose.

Most of the bigger wholesale houses do a great deal of educational advertising. These reach out all over the United States through

the medium of magazines. Anyone who sells honey knows that some districts use a lot of honey while in other districts very little is used. What is the reason?

The answer is that in one district people know what honey is and in the other they don't. The same magazines reach both districts and one is seemingly as intelligent as the other. In the first district some beekeeper has gone out to the county fair and shown the people what he had and what it was for. In the second district the beekeepers thought everybody knew as much about the subject as themselves. The printed words help some, but a demonstration is worth more than a whole book.

For this reason it is up to the individual beekeeper to make known the truth about his wares. If he does, it will not be many years before honey stations can be established in the principal towns just as the cream stations are now, and the big and little producer will be assured of a fair price for their commodity.

But this does not sell the present crop. The season of fairs is over and 9 cents won't bring enough to pay for supplies and taxes. The stores are selling home-grown for 20 cents in combs and two pounds for a quarter strained. Your honey is all up in even combs. You have taken it from the hives without the use of the smoker, for fear of tainting it. You have put the sections in appealing little containers. You loaded your supers in such a manner that they came out clean from the hive, with but little propolis upon them. You leave this as a trademark of the bees; your honey is autographed, as it were. You take no chances of contaminating the honey with sawdust by cleaning the boxes with sandpaper. Your honey is worth a quarter of a dollar at the very least.

How are you going to get it?

Find a dealer who will let you make a display. Tell him why your

honey is better than anyone else's in the United States. Give him a good profit. If you have to sell for 35 cents, do it. Then, when you establish the price on your goods, stick to it. If Tom Jones comes to you and wants to buy honey, sell it to him at retail. Don't stock up the grocer with your product and then peddle it all over the country at the price you sold it to him. You don't do that with your eggs, so why do it with your honey? Play fair.

Give quality and service. Reach out after new business all the time. Educate people to use honey instead of sugar. A piece of bread covered with candied honey is about the best thing I can think of, and there are thousands and thousands of little boys and girls around us whose parents think that after honey has crystallized it is spoiled.

Get out and tell people what you have. People who say that they do not like honey, like candied honey in many cases. Get them to try some. Nearly every family, restaurant, hotel, is a prospect. Any family should use sixty pounds a year, and many use three and four times that much. With education, the demand could become so great that the beekeepers would have to consider the use of electric lights in the hives, as some of the egg producers do.

To Sell More Honey

By Morris Spencer

To a man that has spent a lifetime studying advertising, the editorial department of American Bee Journal for February sure makes him get that feeling to want to show them how. It's true you have refused several of my articles along this line, but for the help of the beekeeper, why not open up your columns and say: "Give us all the facts?" Then after a thorough discussion of the subject, end up by asking a vote on a half a dozen plans. It's as plain to me why we cannot sell more honey as that the next day will come. First, I can say experience has shown me that about the worst trouble is that little word "spite." One state is afraid of another, viz.: Texas doesn't want California to sell honey on her territory, as she calls it. The next trouble is, people buy honey by color just as a woman buys clothing. What foolishness! The truth is, all honey, from water white to amber, should be one grade, put together. The next trouble is that too much green honey is on the market; look at it in stores, about like water.

That's what kills the honey trade. It isn't the price. Often they tell me of buying honey and dumping it in the waste can. Make a rule that honey must go 12½ pounds to the gallon. Refuse to handle anything thinner. That's the way I do it. Of course, I have a job, to buy ripe honey in poor years out here, but have found at last producers that let it ripen. Next comes trade mark. What we need to do, "lay down the sword," agree on a name for ripe honey, then sell it as white sage honey, white alfalfa honey, white clover honey. Then comes the place that hurts—advertise it and distribute it right. Again, organize each state into headquarters for storage, then again have banks to lend us money; hold the honey, don't dump it on the market and kill prices. All one needs to do is to study what has been done and how it was done. California will get a big crop the coming season; hold it. I did it a few years ago, was offered 3¼ cents. Held for a year, and advertised and sold for about 7½ cents, but that's too low. There should be a wholesale price of about 10 cents and retail at about 15 cents or more in the East. Just get together, advertise it a year or so, and then will come a rush to get under the trade mark. Our guarantee should be "satisfaction or money back." California.

A Group of Rocky Mountain Beemen



Front row, left to right: Mr. Danielson, Frank E. Gray, R. G. Richmond, Abraham Elliott, Mr. Woffenbarger, Harvey Whitacre. Standing, left to right: Harry Evans, William Lindenmeier, J. E. Eckert, George L. Langford, Mr. Warren, Otto Rauchfuss, Miss Rauchfuss, Dr. A. P. Sturtevant, Miss Rauchfuss, Mr. McCary, Mrs. Whitacre, V. J. Ramboz, C. A. Bjurman, Herman Rauchfuss.

Southwestern Honey Plants

Some Minor Sources of Nectar in the Desert

By Frank C. Pellett

PLANTS which are able to survive the heat and drouth of the desert regions are those which have been able to adapt themselves to great extremes of temperature and moisture. The long periods without rain are fatal to most plants. Some, like the cactus and agaves, store up a large surplus of water in their leaves or stalks to carry them through the dry times. Others root very deeply and are able to draw the small amount of water present in the soil from great depths. Still others shed their leaves and are dormant until the rains come again. There is no more interesting region in which to observe plant and animal adaptations than the desert.

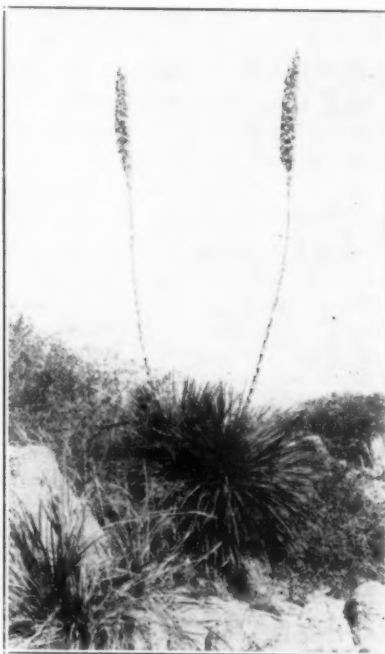
The Yuccas

Throughout the dry areas of the southwestern United States and adjacent Mexico, the yuccas are among the most characteristic plants. In portions of western Texas, southern New Mexico and Arizona, one may travel for miles with little other conspicuous plant life in sight.

Some of the yuccas have very short stems with a large cluster of leaves near the surface of the ground. Others rise in palm-like trunks to a considerable height. The leaves are thickened with a rough surface.

The flower clusters of the yuccas are among the most beautiful and amazing examples of profuse blooming to be found on the American continent. The smaller species send up flower stalks three or four feet

in height, with dozens and at times hundreds of creamy white blossoms. Some of the larger ones, common to California, send up a flower stalk as large as a small telephone pole.



Sotol

The blossoms must be seen to be appreciated. The imagination of one who has seen only the common flowers of the North and East can hardly picture such a display from a single plant.

The leaves of several species of

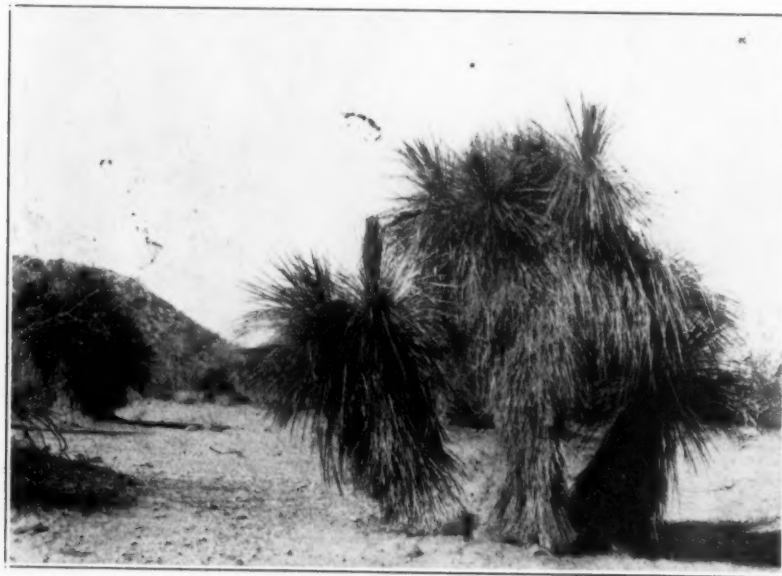
yucca furnish fibre which is used in the making of ropes and the weaving of mats, and to some extent for cloth. *Yucca elata*, known in New Mexico as palmilla, is especially valuable for such purposes.

Sometimes the trunks of the trees are used in building and the leaves for thatching the roofs, by Mexicans and Indians, who live in crude dwellings.

During long-continued dry weather the cattle are at times reduced to the necessity of feeding on yucca leaves, but they make poor forage. The flower clusters, on the other hand, are more palatable and are relished by the hungry animals. The opening buds furnish food for human beings, either being eaten raw in the form of salad or cooked like vegetables.

It is a well known fact that the yucca plants depend for pollination upon a small moth, the *Pronuba*. The moth lays her eggs in the developing seed cases. It is doubtful whether nectar plays an important part in attracting insects to the blossoms. This being the case, we would hardly expect this group of plants to furnish large yields of honey. Apparently some species are of very little, if any, value to the bees. Doctor William Trelease, in the thirteenth report of the Missouri Botanical Garden, says:

"*Hesperaloe* secretes much nectar and appears to be adapted to birds, as are the Cape aloes, to which it bears no inconsiderable resemblance in its flowers. The other genera are sparingly, if at all, nectariferous,



Yucca in Arizona desert



Joshua trees, largest of the Mohav

though all have septal glands, which are small in *Clistoyucca*, but very large in the others."

In the bulletin on California Honey Plants, Richter mentions *Yucca whipplei* as the source of surplus honey, where it is abundant.

On the whole, the yuccas may be regarded as unimportant as far as surplus honey is concerned. In a region where they compose so great a part of the flora the bees profit from them as a source of pollen, and the small amount of nectar usually secured is used in sustaining colony activities.

Sotol

There are several species of sotol (*Dasylirion*), common to the dry regions of west Texas and westward. They are closely related to the yuccas, but may be readily distinguished in most cases by the curved thorns which occur along the margins of the leaves. The trunk is usually five or six inches in diameter and two to four feet in height. The flower stalks are tall and bear large numbers of white or creamy flowers.

The numerous leaves form a thick crown about the stem. The opening center or head is often fed to cattle or other livestock. It is also roasted for food by the natives of the region. A strong alcoholic drink called "sotol" is made from the same source.

I found sotol abundant in but few places within reach of any beekeeper visited. In a few New Mexico localities it is valued as a minor source of honey. J. W. Powell, of Mesilla Park, reported that one year he averaged a super of honey per colony from it, but that it is not dependable as a source of nectar.

The Soapbush

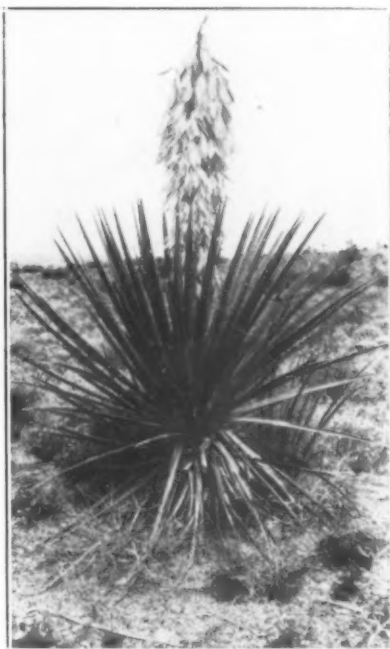
In southern Texas there is a shrub

commonly known as soapbush and sometimes as lignum-vitae tree. It is described in the older botanical works as *Guaiacum angustifolium*, although later authors separate it into a new genus, *Porlieria*. The wood is hard and takes a fine finish. The heartwood is brown and the sapwood yellow. The bark of the roots is sold in the markets and is used for medicine and for washing woolen

very little moisture the soapbush can be depended upon to give them some honey. At Crystal City, Texas, it was said to be the first source of nectar in spring, blooming in early March. The flow lasts for a week or ten days, but the colonies are usually not strong in bees at the time of the spring bloom.

Honey from the soapbush is light in color, mild in flavor and of pleasing taste. Although it is said to yield considerable honey, nowhere did I find a beekeeper who regarded it as of major importance as a source of surplus.

The photograph was taken at the Texas Apicultural Station near San Antonio, where it grows along with mesquite, catsclaw and cactus.



Some of the smaller yuccas send up flower stalks three or four feet high

goods, since it does not cause the colors to fade.

An interesting characteristic of the plant is its tendency to bloom following rains in both spring and fall. Beekeepers report that with

Sweet Potato Pudding

- 2 eggs
- ½ cup honey
- 2-3 cup whole milk
- 1 cup grated sweet potato
- ½ tsp. salt
- ½ tsp. nutmeg
- 1 tbs. melted butter
- ½ cup black walnut meats
broken in small pieces

Beat eggs until light, stir in honey, milk, grated sweet potato, salt, nutmeg, butter, and nuts. Bake in greased pan in moderate oven one hour. Serve hot with a sauce made of

- 4 tbs. honey
- ¾ cup boiling water
- 1 tbs. melted butter
- Pinch of salt
- Grate of nutmeg

Do not allow sauce to boil.

Sugar may be used in sauce instead of honey, boiling five minutes. Or whipped cream may be used instead of sauce.

Mattie M. Goodpasture.



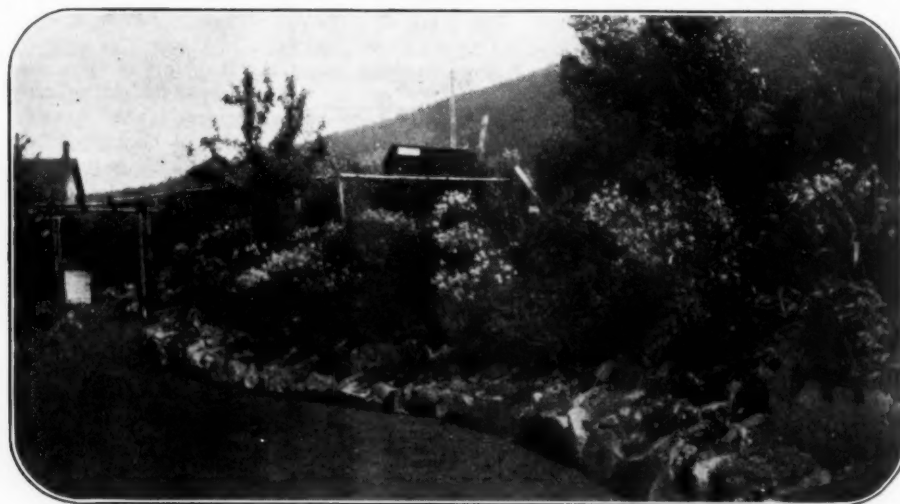
Mohave Desert of California



Soapbush

THE BEEKEEPERS' LOOKOUT

A BEEMAN'S GARDEN



The close relationship between the bees and the flowers must of necessity bring every beekeeper to appreciate the blossoms from which the nectar comes. Many come to love the flowers for their own sake. I have visited some famous gardens kept by rich men on great estates, and some in connection with public parks where large sums are expended in their upkeep. The most wonderful garden I have ever seen kept up by the care of the owner in connection with his home, on a small plot of ground, was that of W. J. Sheppard at Nelson, British Columbia.

As Provincial Apiarist, Sheppard is well known to the readers of this journal. Some of his inventions, the Kootenay hive case, for example, are in general use among the beekeepers of the Northwest. Sheppard makes his living from the bees, but he seems to live for the flowers. On the small space of three city lots he had his apiary, his vegetable garden and a flower garden which included 700 named plants. It is hardly necessary to add that all of the ground was used and that the plants were arranged so as to make complete harmony. To look at the garden one would think that nature planted it, so completely was the space occupied and so naturally did the plants fit in their relationship to each other. The picture of a corner of this garden shows how a sidehill location was utilized.

We can learn much from our Canadian friends about gardening, and never do I make a visit to Canada but I return determined to get better results from my flowers.

Mountain Honey

From Blue Canyon, California, comes the following letter from Dr. H. N. Miner:

"I am a mile above the sea on the western slope of the Sierra. Only wild flowers and shrubs abound. June 1, 1925, I placed a two-pound package of Carniolans in a standard ten-frame hive. In October of the same year I took eighty pounds of "wild" honey from the super and left fifty pounds in the brood chamber for winter. I now have nine colonies. Last October I took 500 pounds of honey from the supers and left 400 pounds for winter feed. Who says Carniolan honey is not a profitable crop in the California Alps?"

About Heather

For some years we have been hearing about heather and heather honey from the Northwest. Beekeepers have written to say that heather is common in some sections and that the bees work it as in old Scotland. So many such reports have come to the writer only to be denied by botanists to whom the question was referred that I found myself much puzzled as to what it was all about.

My friend J. W. Winson, of British Columbia, explains it all. Of course, to a Scot there is no heather but *Calluna vulgaris*. The heather of the Northwest does belong to the same family, however, and, although not the same species as known to Scotland, is entitled to the name. Winson's letter follows:

"Of course, if there's a wee drappie o' Scotch bluid in ye, ye'll no allow there's onny heather beyant

bonnie Scotland. If, on the other hand, you do not descend from that awful proud, exclusive race, you will admit that there are more heathers, heathers and Ericaceae, in the world than ever heard the bluebells of the blue-nosed, red-whiskered Burns-besodden Hiellands.

"Let them keep their *Calluna Vulgares* with all their commonness. Ours are greater bells and far more 'bonnie.'

"Some vile, mean, bleary-eyed, dour and sour creature, in a moment of sobriety named our two heathers red false heather and white false heather. To whom are they 'false,' prithee? Not to their own sweet natures, though the ginger-head seeing them in the hills where his heather ought to be, if it followed his avaricious nature and corralled all the hills of the world, saw it was different and dubbed it false.

"I hate the word 'false' applied to a flower. It shows a mean or lazy mind in naming it. Of these Scotch heathers we have three. *Phyllodoce empetriflorus*, Red Fill-o-do-see, we call them, and *Phyllodoce glanduliflorus*, flowers yellowy green. The false white heather is a *Cassiope*, a moss heather. *Cassiope Mertinsiana* and *C. tetragona*.

"Some call *Phyllodoce glanduliflorus* the white heather and it is really green, and *cassiope* is more commonly known.

"All are in our mountains, from California to Alaska, and produce nectar. They are heathers, true heathers, to any but bigoted Scots folks. If you are that—well, you can't help it; if you are not, honor

the true heaths by giving them true names.

"Hearty good wishes and thanks."

J. W. Winson.

Leaf-Cutter Bees

In the January number of Entomological News appeared the following:

"The Megachile, or 'leaf-cutter' bees, as they are commonly termed, are so called because of a very general habit they have of cutting pieces out of rose leaves, rose petals, poppy petals, the petals of hollyhocks, aspen leaves, and from the leaves and petals of a host of other plants. The pieces cut out are of two general shapes, small round ones and oblong larger ones. The former are used for the ends and the latter for the sides of the thimble or oblong-shaped cells into which the pollen and egg are placed, and in which the young bee develops, spins its cocoon, pupates, and from which it later emerges mature. The cells may be placed in tunnels in the ground, or in the old stems of plants, or in various and unique places.

"This habit of cutting leaves is one of long standing, as evidenced by the fact that Prof. T. D. A. Cockerell has found unmistakable evidence of it having existed more than a million years ago. Fossil leaves have been found at Florissant, Colorado, from shales dating back to the Miocene period, from which the characteristically shaped pieces, similar to those made by the Megachile bees of today, have been cut. In one specimen a number of these had been cut, the edges sharp and clearly defined, showing that they could not have been the result of some chance injury. It seems very probable that these were made by Megachile bees, for the cuttings from the leaves are so very like those of today, while fossil Megachile bees are found from these same rocks. The fact that a number of pieces were cut from one leaf suggests that the bees had a habit of returning to the same leaf for material. This habit is observed very often now where a rose may be found completely riddled from the many visits of a bee."

F. C. P.

Honey In Saskatchewan

Saskatchewan honey yields in 1926 were 170,267 pounds, with a value of \$37,817. In 1924 the yield was 79,309 pounds, with a value of \$18,609, and in 1925 the yield was 162,175 pounds, with a value of \$36,827. The number of registered beekeepers in the province in 1924 was 406; in 1925, 667, and in 1926, 860.

for April, 1927

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W. A. WALSH

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One two-pound package with select untested queen, \$4.00; six at \$3.75 each; dozen or more at \$3.50 each.

Select untested queens, one, \$1.00; six for \$5.50; twelve, \$10.00.

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The Colorado Honey Producers' Ass'n
Denver, Colo.

Bees and Red Light

By Dr. E. F. Phillips

An editorial in the March issue refers to statements to the effect that bees are entirely blind to red light, such as is used in photographic darkrooms. These statements would be most interesting if true, but it happens that not the whole story has been told, for under some conditions bees do respond to red light. In a study of bee activities, we are able to recognize perception of a stimulus only if the bees respond in some way by a movement which we can detect. It may often be that they perceive stimuli without responding, in which event we have only the negative observation of a lack of movement. This seems to be the case with the reported observations on red light reported in the editorial as coming from Mr. Richardson, an English observer.

On one occasion, Mr. Demuth and I thought that we could take advantage of the well known "fact" that bees do not perceive red light, for this is by no means a new supposition. We used a red electric lamp manufactured by a high-class firm, and this identical lamp had for some weeks been used in a photographic darkroom without injury to plates, so that it seems certain that the rays of light which passed from this lamp were not of a wave length shorter than red. For a short time this lamp was used in a bee cellar without any noticeable effect on the bees, but one colony was being wintered on honeydew stores, and within a comparatively short time this colony became quite active as soon as the red light was turned on. It finally became necessary to wrap the red lamp in a long tube of black paper in order to get a small beam of red light with which to make observations on the instruments which were in use, for otherwise this particular colony was badly disturbed.

It appears, therefore, that red light is perceived by bees, but that they respond to it only in case they are disturbed at the same time by other conditions. As a matter of fact, this has been duly observed and recorded by others who have studied the responses of bees to light, but it is interesting that we obtained a confirmation of this fact in a more or less accidental manner. The moral of this story is that one should be a little careful in stating what bees cannot do. There is, if one wishes to hunt for further morals, the situation that one should be a little careful about making statements about bees, for fear someone else has already published information based on carefully observed facts which prove the contrary. So much work

has been done on bee activities that it requires some care in searching for the facts already published. We can, at any rate, state that Mr. Richardson is quite mistaken in his conclusions, for what he should have said is that normal bees seem to pay exceedingly little attention to red light.

Alberta, Canada, Honey Production

The value of honey produced in Alberta, Canada, increased from \$23,000 in 1925 to \$36,550 in 1926, according to Consul S. C. Reat, Alberta.

A Canadian Visitor

The success of the beekeeping work carried on by the Department of Agriculture in the province of Manitoba has attracted so much attention that beekeepers in the states have wished to know more about it. Accordingly, L. T. Floyd, Provincial Apiarist, was invited to address the conventions in three states last winter. He was the guest of the associations in Illinois, Wisconsin and North Dakota. The North Dakota folks elected him to honorary life membership in the organization.

Floyd is a common, every-day sort of chap with plenty of common sense and a thorough knowledge of beekeeping. He made a decided hit at every meeting he attended and aroused much interest in the possibilities of beekeeping in western Canada. Now that bee men on this side of the line are getting acquainted with him, it is probable that he will be invited to come back and speak at other meetings also.



L. T. Floyd

Cooperation—The Word of the Hour

That the idea of eventual cooperation is busying the minds of beekeepers is evidenced by the frequent letters coming to us on the subject, from beekeepers of all degrees.

Our good friend, Ralph Miller, of Dwight, Illinois, sends us the most recent plea for the use of our influence in furthering cooperative effort among the beekeepers of his state.

"We must continue to suffer the onslaught of the price-cutter until we appreciate the need for cooperation. Illinois produces honey of the finest quality. Shall we sleep all our time away, or shall we enjoy a prosperous industry that shall never die out?"

He cites the example of the western states. There the beekeepers, far from a market, and producing honey in carloads, are quickly forced to cooperative control as the most obvious way out of difficulty. Can the smaller and scattered beekeepers of other sections ever be brought to working harmony?

Death of Pioneer Texas Bee Woman

We have recently learned of the death in Orange, California, of Mrs. Jennie Atchley at the age of seventy years. Mrs. Atchley formerly resided in Beeville, Texas, and was prominently known throughout the United States as the head of the Jennie Atchley Company, operating from that point and shipping queens and bees in the early days.

Many of our readers may not be acquainted with the old Texas bee publication, "The Southland Queen," which began in May, 1895, and which was continuously published until July, 1904, when it was discontinued. This publication was under the leadership of Mrs. Jennie Atchley and had no little to do with the pioneer development of beekeeping in the state of Texas.

Novel Guessing Contest

There have been guessing contests as to number of beans in a bottle, number of apples in a box and number of seeds in a bowl, but it remained for citizens of Robert Lee, Texas, to guess as to the number of live bees on display in a store window there. The occasion was the appearance of the "Keeper of the Bees" at a local theatre, and the prizes were tickets to the show and a dollar in cash. Guessing contests are always interesting, and in this case there was little chance for mathematical calculation to assist the successful contestant.



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Are very gentle, very prolific at all times, build very white combs, are little inclined to rob, rarely affected with European foulbrood, and are most excellent workers. They breed rapidly during the spring months,—a decided advantage in our northern states.

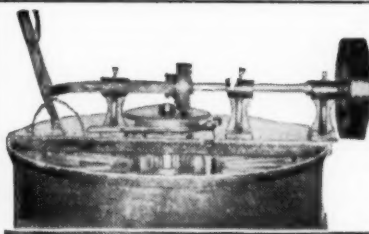
In the fall of 1926 we shipped successfully three colonies of Carniolan bees from Glen Gardner, N. J., to the Department of Agriculture and Forestry, Tokyo, Japan, for breeding purposes. This feat of successfully shipping bees over 10,000 miles across the United States and the Pacific Ocean has never been accomplished before, so far as we know, by any beekeeper or any race of bees, and certainly speaks well for the wonderful vitality of Carniolan bees.

Twenty years' experience with Carniolans. During 1926 we imported Carniolan queens for breeding purposes from Jan. Stgar, the most extensive queen breeder in Carniola, and from M. Ambrozic, an extensive honey producer in Carniola. Orders booked at the following prices:

Two-pound package with queen	\$ 5.00
Eight-frame colony with tested queen	12.00
Select line-bred breeding queen	10.00
Untested queens	1.50
Tested queens	2.50

We expect to ship package bees and colonies May 5 to 15, and untested queens May 25, these dates depending on previous weather conditions.

ALBERT G. HANN, Glen Gardner, N. J.



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Patented 1924

Is about the size of a four-frame reversing machine, but extracts both sides of twenty-eight combs at one time.

Write for circular to

S. P. HODGSON & SONS
NEW WESTMINSTER,
British Columbia, Canada.

If you want immediate action on that order for package bees better place it with me, no lost motion here. Ask for prices on what you need. Bees ready to ship March 20th, Queens, April 1st.

W. H. MOSES

Lane City, Texas

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

HOW TO TREAT FOULBROOD

I want to ask some questions on one method of treating American foulbrood, on pages 10, 11 and 12 of Farmers' Bulletin 1084, also second paragraph on page 14.

This seems to be so easy a method, and would take but little time during the busy season, that I would like to use it, if it is as efficient as the method that requires the second "shake."

1. Why not use full sheets of foundation, instead of starters?

Now, by this method most of the combs are to be left in the hive as permanent, unless you want better, by replacing them with full sheets of foundation or other combs.

2. Now, I have the impression from what I have read that germs may be imbedded in the wax of the new combs, and even in the propolis of the hive, where there has been only one "shake."

If these germs are in the comb, would not the disease be liable to break out again some time, especially when the combs become old and filled with cocoons, as then the bees sometimes tear them down, partly, and rebuild?

3. Are the germs only in the honey and the dead matter of the bees?

4. When a queen is caged in her own hive, can the bees always be relied on to feed her enough, or should some queen candy be placed in the cage? Last year I treated a few hives by the method given in your book, "First Lessons in Bee Culture."

5. I do not want this one "shake" method unless it is efficient. I want to treat every colony this coming spring. Do you think during fruit bloom would be the best time, or wait till the regular honeyflow?

ILLINOIS.

Answers.—1. We use strips of foundation instead of full sheets, so that the bees may have to use the honey in their stomachs to build comb. Otherwise they might have occasion to put some of that honey in the cells and thus continue the contamination. It is important that all the honey be digested.

2. There is very little danger that the germs be in the combs, if they are freshly built. As to the propolis, it is all melted and burnt when the gasoline torch is used. If you think you will be more safe in transferring the bees the second time, do it. But be sure and use a queen excluder in front of the hive, as the second shaking often causes the queen to want to swarm out.

3. The germs are pretty well scattered everywhere, but most especially in the combs of brood and in the honey.

4. If you cage the queen, the bees will feed her. But it is better to put a queen excluder at the entrance, because then the queen can begin laying, and after they have brood there is no longer any danger of their swarming out.

5. Treating every colony was what we did in 1907, and we shook them twice. We cured it efficiently. The best time would be at the opening of the harvest, but if you have a heavy fruit bloom you can most probably succeed. You may have to feed a little afterwards.

FEEDING AND REMOVING BEES FROM CELLAR

1. I have two colonies in Modified Dant hives in a cellar, and the "keeper"—who is also a novice—and I do not agree

as to how to handle them. The hives were closed in front to about a two-inch opening, and screened with fine screen on account of mice, and to keep the bees in. Think the keeper took out a few dead bees once or twice, and they seemed to be quiet until, about two weeks ago, they must have been cold, as the moisture ran out, and he put in a lamp and they quieted down. Then it turned warm and they got restless again. He tried to clean out the hive again, and they came out so thick he put the screen on again. He thinks they should not come out unless they can fly, and I thought it would be all right to put a coarse screen there so they could get out. What would you advise about this?

2. About when should they be moved outdoors?

3. Could we feed them in the cellar now, or should we wait until they are taken out? Is the pail in the super about the best method? Would partly finished comb sections be better?

4. Is it practical to get package bees early, say about April 15, here, in an early season, and feed them syrup or some of these partly finished combs? Can also give them a frame from the brood chamber in an old hive.

NORTH DAKOTA.

Answers.—1. It is very important to keep the temperature of a cellar as even as possible, under 50 degrees and above 42. It is also important to keep the bees in the dark and quiet. The oftener you look at them the more restless they will be. When they get aroused once, it is always more difficult to keep them quiet afterwards, as their abdomens become laden with feces. We never put any screen in front of the entrance, and we want it as wide as possible, so they may have plenty of air. It is a mistake to have entrances at any time high enough for mice to get in, whether indoors or out. We often piled our hives four or five tiers high, without any bottom boards between the tier-up hives.

2. Dr. Miller's way was to move the bees out on the first warm day after the soft maples began to bloom. You must do it on a day when they will be able to fly at once. Keep them well sheltered afterwards till warm weather.

3. You may feed bees in the cellar, but unless they are entirely short it is better to wait till they are taken out. In the cellar, sugar candy is as good as anything. Or you may lay partly finished sections over the top of the combs.

4. I believe April 15 would be rather early to get package bees in North Dakota. About May 1 would be soon enough. However, as I have had no experience in that far north country, it may be as well for you to take the advice of your state inspector or of some experienced local beekeeper.

GETTING BEES FROM CROSSED TO STRAIGHT COMBS

1. I am a beginner in the bee business, having traded for a few hives; last fall was my first experience. I got ten colonies and four of them died last winter (starved to death).

They are in hives home-made, but patterned after the eight-frame Langstroth. They have Langstroth frames, but, evidently, no foundation starter was used, for the bees built comb crosswise, and in no shape to manipulate frames without cutting combs.

What I would like to know is, would it (Continued on page 202)

NEW BINGHAM BEE SMOKER



The Smoker You Ought to Own

NEW BINGHAM SMOKER, the most efficient and durable machine on the market. Metal legs, metal binding, turned edges; four larger sizes with hinged covers. Substantial fire-grate with abundant draft holes. Valve in bellows makes smoker respond to the most delicate touch.

Five sizes—Big Smoke (4x10); Smoke Engine (4x7); Doctor (3½x7); Conqueror (3x7); Little Wonder (3x5½)

Special circular of Bingham Smokers free for the asking

A. G. WOODMAN CO. SCRIBNER AVE. AND BLUMRICH ST. Grand Rapids, Mich.

Insist on the best — THE BINGHAM SMOKER

For sale by all agencies of the G. B. Lewis Company and Dadant & Sons. Also sold by many others in this country and abroad.

Capacity 40% Greater
than the 10-frame hive



Apiary of 50 colonies, like the above, produced 250 pounds of honey per colony in 1925, at Hamilton, Ill. Ten-frame hive average for year, 150 pounds.

More Honey at Less Cost
with the

Modified Dadant Hive

B. F. Kindig, formerly State Apiary Inspector of Michigan, writes:

"The future of the honey business depends upon the profit that beekeepers will make. As beekeepers, you and I have a great deal to do with the cost of production in our yards. . . .

. . . "An Iowa beekeeper writes me: 'After several years' experience with the Modified Dadant hive, I find that it has produced all of 100 per cent more honey with 50 per cent

less work than any other hive we have used. I have never lost a colony in the Modified Dadant, and they are so strong that every season is a good honey season.'

"A beekeeper from Missouri writes: 'I have bees in eight-frame, ten-frame and Dadant hives and consider the latter far the better. The Dadant hives yield from 50 to 100 pounds more honey per colony than the others. They are more economical to run and it is not necessary to go through them so often.'

(See American Bee Journal, March, 1925, Page 113)

Modified Dadant hives are sold by all dealers in
Lewis Beeware and Dadant's Foundation

BEES \$1 A POUND

IN LOTS OF 50
PACKAGES OR MORE

Select Queens—Italian Carniolans

QUALITY—SATISFACTION

Our Northern Location makes it possible to save time and money. Book your orders early and reserve shipping date. Circulars furnished upon request

Bills of health and food certificates accompany each shipment

BANTA & WIRE

Redding, California



HONEY JARS

will sell your honey

4 SIZES
Individual
Half Pound
One Pound
Two Pound
Accurate Graduation

Made of Clear Glass they give that increased sales value to your honey. No panels that catch shadows which darkens the color. Beautiful in Clarity and Pattern and strength in Construction.
A trial will convince you!

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PACKAGE BEES

Three-Band Italian Bees and Queens
Now booking orders for 1927 Spring delivery
Safe arrival guaranteed

No disease of any kind in our locality

Send for Free Circular

Two-pound package bees, \$2.50. Young queens, \$1.00

LOVEITT HONEY CO., 602 N. NINTH AVE., PHOENIX, ARIZ.

(Continued from page 200)

be advisable to put an extra hive body on each one and hence a double hive for brood? 2. The moths do not seem to be bothering, but they are rather weak swarms, I think. I have been feeding them sugar syrup for over a month. I am not very able-bodied, and yet had thought of beekeeping in a commercial way, after some experience, however.

MISSOURI.

Answers.—1. It will not do to have movable frames that are not movable. That is the case too often. The best thing for you to do is to add to each hive another story, in which the queen will breed by and by. It must have comb foundation in the frames, so as to secure straight combs, so that you may be able to examine the hives. When the queen moves up into the upper story you can use a queen excluder to keep her out of the lower hive. Then, at the end of twenty-one days, when the brood in the lower story is all hatched out, you can take that story away.

2. The moths can never injure a colony that is strong enough in bees. What you need is to read a good book on bees. Then you will be more likely to succeed. There is money in the business if you carry it on right.

UNITING AND REQUEENING

Four of my eleven colonies are in eight-frame hives and I want to make two out of the four next spring. They have young black queens. Would it pay me to introduce Italian queens to them? And when—before or after uniting? My other colonies are Italians. That is why I wish to get rid of the blacks, to prevent misfertilizing.

WISCONSIN.

Answer.—You can easily unite your colonies at the time of fruit bloom, but you should have them close together, so that the old field bees will not get lost when they are united. If they are some distance apart, move them slowly, when they can fly—about six inches at a time, to get the two close together that are to be united.

Order your queens to reach you by the time of fruit bloom. When they arrive, kill the black queens (not before, because they would rear queen cells), then some cool morning put the combs covered with bees from the hives into a hive large enough to take all the brood. Smoke them well and introduce the queen in a cage, to be released after twenty-four to forty-eight hours. It is well to give the bees a little feed, if there is no honey in the fruit bloom. If they harvest honey, they will not fight. But be sure that there is no chance for robbers.

If I had those colonies, I would buy four Italian queens and would not unite them, if they are in good order at the end of winter. But I would surely Italianize them at the time of uniting them.

MAKING HONEY SAFE TO FEED

We have a lot of honeydew and inferior honey which we cannot sell. Our bees are rather short of stores, owing to the unfavorable weather conditions last fall. I would like to feed some of this honey this spring, but am not positively sure that it is free from American foulbrood germs, as we had some foulbrood last spring. How long should this be boiled to make it safe for feeding?

ILLINOIS.

Answer.—According to Dr. G. F. White, of Washington, the man who discovered and described *Bacillus larvæ*, the cause of American foulbrood, honey should be boiled a half hour to be immune from the bacillus. If you use that honey for spring feeding, I would suggest that you add a little water to it afterwards, as this boiling will make it very thick. It should not be used for fall feeding.

RODENTS IN HIVE

I have three colonies of bees. I have one colony in a single-wall hive with an entrance one-fourth-of-an-inch opening in height and two colonies in double-wall hives with an entrance opening of three-eighths of an inch in height. They are wintered outside on a summer stand, being well packed, with the entrance cut down to one and a half inches in width. In my single-walled hive I find the dead bees whole just as they died, and in the double-walled hives I find the bees that I rake out all chewed up very fine.

In looking through the beekeepers' guide (Cook's Manual of Apiary), I see where he refers to a short-tailed shrew—Blarina—stating they could get in a three-eighth opening and they do very little damage to combs, but they eat the bees, but he did not say whether they eat the live bees or the dead ones.

Now, if there is a mouse of that description in the hives, would it be advisable to open up the hives this time of year to eliminate the mice, or would there be danger of chilling the bees?

IOWA.

Answer.—I have no experience with shrews that are small enough to pass through a three-eighth opening. If the shrew is actually in the hive, it will pay to take it out some day when the weather is not too cold to chill the bees that may leave the cluster. I have no doubt that such a rodent will eat live bees. Even if they do not eat them, they will cause more or less disturbance by moving about the combs.

To prevent further trouble from shrews, it may be advisable for you to establish some tin entrance block at the entrance, this tin to be removed at times to enable the bees to carry out their dead.

TO MAKE A SHOOK SWARM

1. I am thinking of trying shook swarming this season. I understand you move the old stand back and put the new one, that you shake the bees in, on the stand where it sat. Now, of course, the one that is shaken in the new hive has the queen, and Doolittle said to go through the old hive of brood in three or four days and hunt and destroy queen cells, and in about a week go through and do the same thing. Now, how soon should I give it a good, young queen, to build up for best success for the honey crop?

2. How soon should I put supers on the shook swarm?

MISSOURI.

Answers.—1. Give the young queen as soon as the brood is all sealed and there is therefore no more possibility of the bees rearing another queen. The idea is that as long as they have chance to rear another queen they may refuse the one you give them after they have begun queen-rearing. But if you buy a young queen and have her in hand when you make your swarm, you can introduce her to the queenless colony at once and they will not be queenless for any time at all. This is really the better way, as the hive loses no time.

2. I cannot tell you when to put supers on, because the putting on of supers must depend upon the crop. You should keep an eye on your colonies and put supers on just as soon as the brood combs are about full.

MOVING BEES SHORT DISTANCE

I have forty-five colonies of bees I am going to move a distance of 175 feet, where I already have forty colonies. A barn and sheds are now between the two yards. Please advise me how and when would be the best time to move them.

TEXAS.

Answer.—Move those bees when there will be fair weather, so that they may be sure to take a flight just as soon as they are released. When you prepare to move them, you must frighten them, so that they will know that something is radically wrong

with their home. This will cause them to investigate as soon as they are released. It will put them in the position of a natural swarm, which always pays particular attention to the place where its new hive is located. If you carried them over without any disturbance, those bees might take flight afterwards without taking any note of their change of position. It is well also to place a slanting board in front of each hive, so the bees may notice at once that their location is changed.

If you are afraid that some of the bees will go back anyhow to the old spot, leave two or three of the weakest hives on the old spot. The bees will join them and will strengthen them, and the following day you may finish the job without the loss of any bees.

TO PREVENT DRIFTING ON REMOVAL FROM CELLAR

I have 150 colonies in cellar—twelve or thirteen rows of summer stands of about twelve colonies each. Every spring there is considerable drifting from each end to the center. At our last convention one of the lecturers advised taking out only one-third at a time. After these had their cleansing flight and taken their bearings, take out another one-third, and so on. Against that we have some writers advise to take everything out at once, otherwise the first will rob the last. What do you think?

MONTREAL.

Answer.—Our experience is that there will be some robbing from the colonies that are out and in good shape, when the others are put out. We found that there is little or no drifting if the colonies are put back into the apiary on their own stand. In order to do this properly, it was our custom to leave on the summer stand each hive top, with the number of the hive marked on it, each hive also bearing a number. Our explanation is that the old bees remember their location, and when the colonies are mixed up there is an excitement which causes drifting.

Under present circumstances, as you probably did not mark the hives and cannot return them to their exact spots, I would recommend that you take out about a third each time, then close up those that are out, when taking out the next lot, giving them freedom only in the afternoon. Unless the weather is very warm, they will not suffer to be confined for a few hours. In a couple or three hours the newly brought out bees ought to recover themselves sufficiently to defend their homes.

MOVING TO THE HONEYFLOW

I expect to buy, some time in April five swarms of bees from John St. Romain, who lives about forty miles north of me, and he is supposed to come here himself and put the bees in my hives.

One of my neighbors, who lives a mile away from me, has about one hundred big orange trees, which will bloom about the time I will buy the bees. As for myself, I have no orange trees, or scarcely any other flowers at this time of the year.

Now, could I take these Italian bees and put them on a truck and carry them a mile away so they can gather this honey for me? The proprietor himself has no bees, and at the moment the flowers begin to fade or wither away, then I can carry my bees back home. Must I do that at night or in day time?

LOUISIANA.

Answer.—I do not believe it will be necessary to transport your bees to your neighbor's place, if he lives only a mile away. I believe your bees will find his orange trees. At any rate, it will be worth while for you to find out, which may be done easily when the bloom is on.

Of course, you could haul your bees there and back, but you would lose some

Gray Caucasians

Are the gentlest bees known and are more prolific than Italians, says U. S. Bulletin No. 447.

We are offering queens from our best direct imported or home breeders. Ready April 20.

One	-----	\$1.50
Six	-----	8.00
Twelve	-----	15.00

Ten per cent discount on larger orders
Write for prices on package bees. Health certificate with each shipment.

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QUALITY
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Our increase in business shows that the beekeepers like Root Bee Supplies and our service.

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We Can Serve You Well

PACKAGE BEES

May 15 and after

Two-pound packages with select untested queens. Also 12 per cent additional bees \$3.00 each, one package or one hundred. We guarantee: Pure stock, no disease, and perfect satisfaction. Certificate of inspection with every shipment.

Sixteen years' experience

THE CROWVILLE APIARIES

J. J. Scott, Prop., Crowville, La.

BOOKING ORDERS

for high-grade three-banded Italian bees and queens: 2-lb. package with select untested queen, \$4.50; discount on quantity. Select untested, \$1.00, \$10.00 per dozen; select tested queen, \$1.50. Inspector's certificate with each.

J. ALLEN, Catherine, Alabama

Achord Combless Packages and Queens

The Best of Pure Three-Banded Italians

The Pick of the Honey-Makers

2-lb. packages with select 1927 laying queens, \$4.25 each; five or more, \$4.00 each

3-lb. packages with select 1927 laying queens, \$5.25 each; five or more, \$5.00 each

If the packages are wanted without queens, deduct \$1.00 from the price of each.

Shipments will start about April 15 and will have inspection certificates and all papers necessary to carry the packages through without delay.

Select 1927 laying queens, \$1.00 each, any number. Tested queens, \$1.75 each. Select tested prospective breeding queens, \$2.50 each.

Producing and shipping package bees and queens has been our sole business for many years. We can give you the very best in bees, queens and service. Your order placed here brings highest value for the money invested.

W. D. ACHORD
Fitzpatrick, Alabama



Every ounce of this re-processed Water
FORMALIN SOLUTION

measures up to a given standard of strength and purity

For sterilizing combs infected with AMERICAN FOULBROOD it is the Cheapest Dependable Disinfectant.

THE DIAMOND MATCH CO.,
Pierce Bldg., St. Louis Mo., Agents

THE D. & B. CHEMICAL CO.
800 E. 37th St. Portland, Oregon

Pure Italian Queens and Package Bees for 1927

Why lose those queenless colonies?
Why keep those old worthless queens?

Book your orders now, have your Queens and Bees sent when you want them. Two-pound package, \$2.50; Queens, \$1.00. Special prices on large quantities.

ROY S. WEAVER, Navasota, Texas

bees that would go back. Then you have to make a screen for every colony for the trip, so they will not smother on the way. It is best to do it at night, but it may be done also in the day time, if the hives are closed during the night. I would certainly not try to do this until I made sure that the bees would not go that far for the blossoms.

WHEN TO ORDER PACKAGE BEES

I intend ordering ten three-pound packages of bees, to be placed in ten-frame hives filled with wired foundation. I am located in southern Ohio and our fruit bloom comes from April 5 to April 10, and our sweet clover bloom comes from June 5 to June 15. Sweet clover is what we depend on here for our surplus. We of course have dandelion and some white clover blooming

between these dates, but as a rule bees work but little on it. What I wish to ask is: Will the packages stand shipment in the uncertain weather about April 1, or should I wait until later? If properly handled, fed plenty of syrup, should they be in shape to work in comb honey supers by June, when sweet clover comes?

OHIO.

Answer.—I believe it will be all right to order bees that early, for you are pretty well to the south. You may need to feed the bees quite heavily after arrival, and you will find it will pay to do so. If your queens begin laying heavily by April 15 or 20, the bees will begin to hatch twenty-one days later and will be fit for the field by the latter part of May. So you will be sure to catch the flow of honey, even if you don't get the pound bees before April 18.

Meetings and Events

Bee School at Seattle

The United Y. M. C. A. Schools of Seattle, which include instruction in many subjects from radio to navigation and business, has lately included a course in beekeeping. This course included twelve lectures, held each Friday evening, with George W. York and Nat N. Dodge as instructors.

The average attendance reported was fifty-five.

Another Marketing Association

W. H. Paul, of Myton, Utah, was recently chosen secretary of the Uintah Basin Honey Producers' Association. This is a cooperative marketing company and any beekeeper in the Uintah Basin is eligible upon payment of one dollar to hold shares in the company. The amount purchased depends upon the number of colonies each one owns. The purpose of this organization is to improve, if possible, marketing conditions.

Kansas College Bees

The beekeepers' program which was held during Farm and Home Week at the Kansas State Agricultural College, on February 9 and 10, was well attended, the principal speaker being Prof. F. B. Paddock, of Iowa State College, Ames. Other speakers were members of the faculty of the Kansas State Agricultural College and some of the prominent beekeepers of the state of Kansas. Beekeepers have expressed themselves as being well pleased with the program and obtaining much information and many points of help in beekeeping.

Arkansas Bee Bill Passes

We have just received notice of the final passage and signature by the governor of the Arkansas Bee Bill, which goes in force at once and which provides for inspector to be appointed by the State Apiary Board, consisting of the Governor of the

state, Secretary of the state, and Commissioner of Mines, Manufactures and Agriculture. It is stipulated in the bill that the inspector shall have five years' experience as a beekeeper and shall be recommended to the Board by the Arkansas State Beekeepers' Association.

This inspector is also to act as an extension man for the elimination of box hives and dissemination of information along progressive lines of beekeeping.

The act provides for an annual tax of 10 cents per colony on all bees within the state, such tax to be assessed and collected as other state and county taxes.

There is also a provision prohibiting the keeping of bees in box hives and providing penalty.

According to preliminary surveys already made, bee diseases are not especially prevalent within the state, there being only five counties in which infection has been found, and this only in a small degree. In fact, the percentage of infection for the state is very much less than 2 per cent, according to the survey.

No doubt beekeeping in Arkansas will progress from the passing of this law, because it will mean that bees can now be shipped, accompanied by proper certificate, and this will allow the commercial producers of bees and queens to enter into the trade with other states and the Dominion of Canada without any difficulty.

Colorado Honey Producers' Association Hold Convention

J. B. Dillon

"As busy as a bee" was the state of affairs at the Auditorium hotel, Denver, Colorado, when the members of the Colorado Honey Producers' Association met February 28 in annual convention.

After Frank Rauchfuss, secretary-manager, made his report for last year, George Miller, of Littleton,

Colorado, spoke on marketing conditions in Colorado. Charles B. Justice, of San Diego, California, showed a film demonstrating the steps made in the production and marketing of honey. Manager Rauchfuss then addressed the convention, urging that the association should make every endeavor to convince the consumers that honey ought to be substituted for sugar in various ways; that the results would be more satisfactory to all concerned. V. C. Fisher, of Montana, told how the artificial honey was affecting the market. According to Manager Rauchfuss, the Kellogg Cereal Company is using honey instead of sugar and finds the change "just what we required."

Walter Rauchfuss, son of the manager, and Rosabelle, a niece, were in charge of an exhibit showing just how nice "cookies" could be made, using honey instead of sugar, and how enticing does honey look and how winning is its taste when properly "put up" in glass containers.

In the election of officers, George Miller of Littleton was elected president; C. H. Wolfe, Greeley, vice-president; Frank Rauchfuss, Edgewater, secretary-manager. Additional directors: I. W. Howsman, La Jara; F. G. Rauchfuss, La Jara; A. J. Selby, Eastlake, and P. M. Pierce, University Park, Denver.

Last year was a fair one, with the crop of honey from Wyoming and Montana balancing the scarcity in northern Colorado, where the clover was not as good as usual.

Five Mountain States Beekeepers Form Cooperative Marketing Organization

By E. M. Atkins

"Organize to stabilize the honey market" was the keynote of the first meeting of the Intermountain States beekeepers, held at Laramie, Wyoming, February 21 to 24. There were between forty and fifty beekeepers, government experts on cooperative marketing and other authorities on that subject in attendance at this meeting. Representatives from Montana, Wyoming, Colorado, Idaho and Utah came together with the determination to get together to help solve their honey marketing problem.

As a result of a thorough survey of the honey marketing situation in the intermountain territory by A. W. McKay, of the United States Bureau of Cooperative Marketing, and with the cooperation of A. W. B. Kjosness, former Commissioner of Agriculture for Utah, a contract, by-laws, articles of incorporation and application for membership, as a working basis, were drawn up prior to the

NO drones in my package bees and the minimum of old worker bees. Let me explain how I cage them to prevent this. My prices, too, are \$3.00 for a two-pound package and \$4.00 for a three-pound package with select untested queen, in hundred lots.

LET ME HEAR FROM YOU

R. V. STEARNS

Brady, Texas

Twelve years of successful shipping

We can care for some rush orders

Two-pound packages with queens..... \$3.00 each

Three-pound packages with queens..... 4.00 each

Queens—Small lots, \$1.00 each; quantity lots, 75c each

Gentle, fine honey gatherers

Circular free

BLUE BONNET APIARIES, Mercedes, Texas

Hutzelman's Solution for American Foulbrood

Use Alcohol—Formalin to be safe

Ask your dealer or write to

J. C. HUTZELMAM, Glendale, Ohio



Hundreds of beekeepers, large and small, testify that Forehand's Three-band Bees and Queens combine a greater degree of beauty, honey getting and gentleness. Would you like descriptive circular?

PRICES JANUARY 1 TO JUNE 15:

	1-12	12-25	25-99
Untested Queens.....	\$1.00	\$.85	\$.80
Sel. Untested Queens.....	1.25	1.00	.90
Tested Queens.....	2.00	1.75	
Sel. Tested Queens.....	2.50	2.25	

One pound bees and queen, \$2.75; ten or more, \$2.50. Two pounds bees and queen, \$3.75; ten or more, \$3.50. Three pounds bees and queen, \$4.75; ten or more, \$4.50.

N. FOREHAND

Gonzales, Florida

Three Banded Italian Queens

BRED RIGHT—SHIPPED RIGHT

Read what our customers think: "I am writing to let you know that you have a good strain of bees. This year has been the worst I have ever had on bees, and the two-pound packages I got from you averaged 150 pounds surplus. They did this besides filling the brood chamber," etc. South Dakota. Name on request.

All queens shipped with packages are from our own breeding. Prices as follows:

1 to 9 Untested Queens.....	\$1.00 each
10 to 24 Untested Queens.....	.90 each
25 to 49 Untested Queens.....	.80 each
50 or more Untested Queens.....	.70 each
Tested Queens	2.50 each

One 2-lb. package with Untested Queen...	\$4.00
Ten or more	3.80 each

Prompt service, safe arrival and satisfaction guaranteed.

JNO. C. HOGG

Ramer, Alabama

Beekeepers Take Notice

For thirty years we have specialized in the manufacture of **Sections** from the whitest selected Wisconsin basswood

We also manufacture hives, supers, frames and shipping cases

Write for our free illustrated catalog

Marshfield Manufacturing Company
Marshfield, Wisconsin

QUALITY QUEENS AND PACKAGE BEES

PRICE REDUCTION

Increase in colonies to draw from enables us to make big reductions in prices. A strain that has given absolute satisfaction everywhere. We can make prompt shipment of both bees and queens.

Quality Queens—1 to 9, \$1.25; 10 or more, \$1.10.

Two-pound packages with queens—1 to 9, \$3.75; 10 or more, \$3.60

Three-pound packages with queens—1 to 9, \$4.75; 10 or more, \$4.60

Pure Mating, Safe Arrival and Satisfaction Guaranteed

VALLEY BEE & HONEY CO. Box 703 Weslaco, Texas

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WRITE IF YOU NEED DESIGNS

meeting. These were discussed in detail and committees formed, to draft changes whenever it was thought advisable, by those attending the meeting.

O. A. Sipple, State Inspector for Montana, was appointed chairman of the meeting and parliamentary rules were strictly adhered to. In this way the greatest success was accomplished in the shortest possible time.

Perhaps one of the outstanding benefits of cooperative marketing was explained by A. Kopperud, manager of the Federal Intermediate Credit Bank of Omaha. Mr. Kopperud explained that it was possible, through a honey cooperative marketing organization, for the members to borrow money through the intermediate credit bank system at 4½ per cent interest, compared with the current rate of interest in the intermountain states of 8 to 10 per cent. In order to do this the members' honey has to be inspected by government officers and placed in a bonded warehouse. In this way, through the efforts of the marketing organization, many "distressed" lots of honey and the honey belonging to all the members desirous of obtaining money early in the fall could be taken care of without having to dispose of the honey at sacrifice prices, and have the honey held for sale when the market could take it to the best advantage, at the discretion of the manager of the organization. In this way it was hoped that the market would not be broken early in the season, as is now often the case.

The address of welcome to this first mountain states beekeepers' meeting was given by Dr. Crane, president of the University of Wyoming. Dr. Crane offered to the beekeepers the full facilities of the university to help them in every way within his province to solve their problems.

Also much of the credit for the organization of this meeting is due the "live-wire" secretary and treasurer of the Wyoming Beekeepers' Association, C. L. Corkins. Among the additional speakers who took part on the program were: A. D. Faville, Commissioner of Agriculture for Wyoming; Dr. B. O. Aylesworth, Director of Markets, Colorado; James Watson, Jr., Manager of the Western Colorado Honey Exchange; R. G. Richmond, State Apiary Inspector of Colorado; Charles B. Justice, Manager of the Justice Honey Company, San Diego, California, and Dr. A. B. Sturtevant, Associate Apiculturist in charge of the United States Field Station at Laramie, Wyoming.

The meeting terminated at three o'clock Thursday morning, after the beekeepers present signed their application for membership in the

Mountain States Honey Producers' Association and the temporary executive directors and manager were appointed. These officers are as follows: President, Mr. Stark, Idaho; secretary-treasurer, Mr. Stinson, of Idaho; Charles Ranney, Wyoming; Mr. Anderson, Utah; W. H. Kendle, Colorado; O. A. Sipple, Montana, and temporary manager, A. W. B. Kjosness, Idaho.

Missouri Beekeepers and Fruit Growers Swap Favors

The following resolution was passed by the Missouri State Horticultural Society:

Whereas, The work of the honey-bee is beneficial in the pollination of apples, peaches and other fruits; and

Whereas, The number of stands of bees in Missouri is being depleted by the ravages of foulbrood and other diseases, to the detriment of not only the beekeepers, but of orchardists in this state; and

Whereas, These diseases, which are difficult of detection by the ordinary beekeeper, are readily detected by trained inspectors and can be successfully stamped out by approved measures of control and eradication; and

Whereas, The beekeepers of Missouri, through the Missouri Apiculture Society, have undertaken to bear the expense of this inspection and control through voluntary registration of and annual assessments against their stands of bees, therefore be it

Resolved, by the State Horticultural Society members, in annual meeting at Columbia this twentieth day of January, 1927, That we respectfully urge the passage by the General Assembly of a bill to effect the purposes desired.

To reciprocate, the Missouri State Beekeepers Association, in a meeting Farmers' Week, at the State College, Columbia, passed this resolution:

Whereas, Missouri apples and other fruit are the finest in the land; and

Whereas, Good fruit is a great aid to health; and

Whereas, The Missouri fruit industry needs assistance and protection; and

Whereas, The protection and development of said industry would be of much benefit to the beekeeping industry by furnishing early blossoms for early brood rearing, be it hereby

Resolved, That the Missouri State Beekeepers' Association most heartily endorses and pledges its support to any bill that will promote fruit growing in Missouri, or to aid in securing an appropriation for such development.

AM-CO Italian Bees and Queens

ARE GENTLE, PROLIFIC, BEAUTIFUL AND WONDERFUL
HONEY GATHERERS

Untested Queens—1 to 5, \$1.00; 6 to 11, 90c; 12 up, 85c each
Two-pound Package with Queen—1 to 9, \$4.00; 10 to 24, \$3.80 each
Three-pound Pkg. with Queen—1 to 9, \$5.00; 10 to 24, \$4.80 each

Send for free circular

ANDALUSIA MANUFACTURING COMPANY
ANDALUSIA, ALABAMA

Wheeling Friction Top CANS



CLEAN, bright, well-constructed containers have a definite appeal to all buyers. They are spokesmen for the quality of your products. Wheeling Friction Top Cans of prime tin plate are made on automatic machinery assuring a perfectly sanitary container.

WHEELING CAN COMPANY
Wheeling, W. Va.

APRIL QUEENS

Fill in the Winter Loss. Prompt Shipment

Untested, \$1.00 each, fifty for \$45.00. Select tested, \$2.00 each.
Good quality three-band only.

D. W. HOWELL, SHELLMAN, GEORGIA

Packages—Packages—Packages

A GUARANTEE OF SATISFACTION

A MONEY back guarantee goes with every package or queen shipped. Fair weight and a square deal. A limited number of orders will be booked, so order early and be sure of shipment at time specified in your order.

THREE-BANDED ITALIANS ONLY

Two-pound package with young queen	\$4.00
Three-pound package with young queen	5.00

Discount quoted on large orders. Write today

URIAH APIARIES, Uriah MONROE COUNTY Alabama

Packages on Combs

Our sixteenth successful year. Have proofs that the natural feed for bees in transit is better. We can book your wants of packages of bees with 20 per cent now, balance at shipping time. Our guarantee: Ship on date promised, Government health certificate, light three-banded stock only, safe delivery—only require a proper notation from carrier, then your dead bees are replaced promptly, if there are any. Each package contains a standard Hoffman frame of brood and honey. Realize what a frame of brood will be equal to when hatched? Each package contains a select untested queen.

10 3 lbs.-----	\$ 45.00	10 4 lbs.-----	\$ 52.00
25 3 lbs.-----	108.00	25 4 lbs.-----	127.00
50 3 lbs.-----	212.00	50 4 lbs.-----	250.00
100 3 lbs.-----	400.00	100 4 lbs.-----	475.00

Three frames nuclei same prices as three-pound packages. If you want to enlarge your package at a small cost, add 60 cents for an extra frame of brood. Five pounds bees, two frames brood and honey, with select tested queen, \$6.50 each. Season opens early in April.

References of my bank, Avoyelles Bank, Moreauville, La.

THE LIBERTY APIARY C. A. Mayeux Prop. **Hamburg, La.**

Ready for Immediate Shipment

We are in a position to supply immediately, either stock or special sizes and grades of

SECTIONS

In Carlots or Less

You will obtain the benefits of our specialization in the production of sections that are perfect in workmanship in every respect—glossy polish, fold square without breaking, smooth dovetailed corner—what more could you wish for?

Write for free samples and a copy of our 1927 catalogue.

AUGUST LOTZ COMPANY, Boyd, Wis.

Light Three-Banded Bees and Queens for Spring Delivery

This is our eighteenth year in the package and queen business. Each year we strive to please our customers by breeding from selected stock, better packing, and above all prompt service. We want your business and to have same we must please you.

Note our prices for delivery after April 10 to May 31. All bees are shipped on a standard frame drawn from Dadant foundation. The natural food which keeps bees contented in transit to destination.

25 2-lb.-----	10 2-pound with selected untested queens-----	\$37.50	100 2-lb.-----	\$325.00
	50 2-lb.-----	\$175.00		
	10 3-pound with selected untested queens-----	\$45.00		
25 3-lb.-----	50 3-lb.-----	\$212.50	100 3-lb.-----	\$400.00
	10 4-pound with selected untested queens-----	\$52.50		
25 4-lb.-----	50 4-lb.-----	\$250.00	100 4-lb.-----	\$475.00

Five-pound swarm with queen on two frames brood and honey, \$6.50 each. Our bees go out with Government health certificate; no bee disease. We guarantee safe delivery—only require notation from carrier if in bad order. Fifteen per cent with order, balance at shipping time.

CENTRAL LOUISIANA APIARIES, Oscar Mayeux, Prop. HAMBURG, LOUISIANA

References: Avoyelles Bank and Trust Company, Moreauville, La.; The Peoples Savings Bank and Trust Company, Mansura, La.

HIGH GRADE ITALIAN QUEENS

Three-banded only

Every one of them carefully selected. Safe arrival and satisfaction guaranteed

Ready April 1. One, \$1.00; twelve, \$10.00

URIAH APIARIES, URIAH, MONROE CO., ALA.

Sunnyland Bees and Queens

Light Three-band Italian
Gentle and extremely profitable

Two-pound combless package, select queen, \$4.00; ten, \$3.80 each; twenty-five, \$3.60 each. Two-frame nuclei with select queen same price; three-frame size, \$1.00 more.

We are a strong advocate of shipping bees on combs. All things considered, you get more for the money spent.

QUEENS—Why not buy the best? They cost no more. One, \$1.00; dozen, \$10.00; hundred, \$70.00.

Orders filled promptly after April 1. State inspected.

**CRENSHAW COUNTY
APIARIES**

Rutledge, Alabama

**JOSEPH
DUSEK
COMPANY**

726 WEST RANDOLPH STREET, CHICAGO.

HONEY Wanted, comb and extracted, any quantity



CAUCASIANS CARNIOLANS PACKAGE BEES

Beekeepers! Try our thrifty, hardy Caucasian or Carniolan bees and queens for 1927. You will find them unequaled for commercial honey production.

Untested queens, \$1.30 each, six, \$7.00; twelve or more, \$1.00 each.

Two-pound packages with queens: 1-5, \$4.00; 5-25, \$3.25; 25 or more, \$3.00 each. No disease.

Write for circular which gives full particulars of our bees and queens.

W. A. HOLMBERG, Turlock, Calif.

PORTER



**BEE
ESCAPE
SAVES
HONEY
TIME
MONEY**

For sale by all dealers.
If no dealer, write factory.

R. & E. C. PORTER, Mfrs.

Lewistown, Ill., U. S. A.

(Mention Am. Bee Journal when writing)

Crop and Market Report

Compiled by M. G. Dadant

For our April Crop and Market Report, we asked our reporters to answer the following questions:

1. How much of the 1926 crop is left?
2. How is the demand?
3. Condition of weather and plants.

CROP ON HAND

As stated in our previous report, the amount of the crop on hand in the eastern part of the country is negligible. In fact, if beekeepers were to exert themselves, they could probably place several cars of honey by supplying their trade with honey purchased from the West.

The same condition applies to practically all the southeast section of the country, where only a few beekeepers have small stocks left on hand. The majority have disposed very rapidly of most of the supply.

Pennsylvania has a fair stock of honey left on hand, probably 15 per cent of the total crop, and some beekeepers in Ohio also have a similar amount, although most of the beekeepers have sold out and are buying to supply their trade.

Indiana, Illinois and Missouri are in better shape as far as extra stocks are concerned, there being probably not over 10 per cent of the crop left on hand.

It is in Wisconsin, Michigan and Minnesota that we find first indications of considerable carryover. Perhaps the total carryover to the present time will be in the neighborhood of 20 to 25 per cent, and apparently the largest carryover is in western Wisconsin and in Minnesota.

The Dakotas, as well as Nebraska, Kansas and Oklahoma, seem to be fairly well cleaned up on their honey, having not in excess of 10 per cent to 15 per cent left on hand, which will readily be disposed of.

Texas has a large carryover, probably 30 per cent at least, although in some sections the honey has all been sold. This carryover here is largely due to the fact that conditions are not good, owing to difficulty in moving the cotton crop, and the people are not buying anything they do not have to have.

In New Mexico, although there is a fair carryover of say 20 per cent, many of the beekeepers are sold out completely. Arizona reports also considerable carryover, probably from 30 to 40 per cent, and many beekeepers are now selling at sacrifice prices rather than carry the honey over until the new crop.

In the intermountain territory, conditions are somewhat spotted, some sections having disposed of all of their honey, whereas others have considerable carryover. It is in Montana and northern Wyoming that probably the largest amount of honey is still held. The same condition holds true in Utah, which has possibly 50 per cent of the crop still on hand, as does Montana.

Colorado and Idaho have probably 25 per cent of the crop still on hand. Nevada reports their crop mostly sold.

In Washington and Oregon, conditions are fairly satisfactory, and in California conditions are very satisfactory. California had a big export sale this year and has fortunately disposed of probably all but 5 or 10 per cent of their honey.

In the Canadian provinces conditions are excellent. The crop was short in Ontario and some other sections, and this has resulted in almost complete cleanup of all honey including what had been carried over of the 1925 crop. Prices are stiffening, if anything, and everyone is looking forward to the new crop year.

HONEY DEMAND

In the eastern sections of the states the honey demand seems fairly good. In the Southeast the same is true. However, in Texas, as well as in the Central West and Intermountain territory, the demand is only light to poor.

In other words, although there has been a slight recovery from the holiday slump, the recovery has not been great, and the demand on the part of jobbers handling honey has been fairly light. Everyone seems satisfied to try to clean up stocks in anticipation of possibly a larger crop this year.

A number of carloads have moved from the Intermountain territory at as high as 7½ cents per pound, but we believe that the average figure will run at 7 cents or under. In fact, some parties claim they have not been offered over 6 cents per pound and that there is very little demand.

WEATHER AND PLANTS

We do not believe we have ever seen conditions in general reported any more favorable than this year. In practically all sections of the country the conditions during the fall were ideal and honey plants apparently are coming out in good shape. Of course, the northern territories are yet too early to give a definite report, but snows in most sections have been heavy and the ground is well covered, which bodes well for the honey plants.

In the Intermountain territory snows have been heavy, and apparently there will be no difficulty in getting ample water for irrigation purposes in all sections, as well as placing honey plants in the drier areas in excellent shape.

In the South there have been some wet, cool spells which have delayed considerably the forward activity of the bees, but probably these are only temporary. The bees were in conditions far better than normal previous to the recent cool and wet spells. It is noticeable that in Texas, especially in the southern part, swarming has already commenced and conditions are ideal.

Naturally, where such is the case so early in the season, there is some possibility of starvation, and we would warn our readers to watch carefully that their colonies do not become overstrong and quickly use up the small stores and be faced with starvation during a dearth of honey nectar bearing plants.

GOLDEN QUEENS — NORTHERN BRED — EARLY SHIPMENT — QUICK DELIVERY

Located in the celebrated Columbia River Valley and west of the mountain ranges, our warm weather comes early enough so that I can begin shipping my fine, yellow, Italian Queens by May 15.

I can thus insure the hardiness of northern bred stock, together with early shipment and quick delivery, to all northwest states, California, and the western provinces of Canada.

Have had thirty-five years' experience in honey production and queen-rearing, and my hardy strain has been further improved by the infusion of breeders secured of Jay Smith.

Will take orders for only as many queens as I can handle, and guarantee safe delivery and satisfaction.

PRICES ARE AS FOLLOWS:

May 15 to June 30		After July 1	
One Untested Queen	\$2.00	One Untested Queen	\$1.50
Six or more Queens, each	1.90	Six or more, Queens, each	1.40
Twelve or more Queens, each	1.85	Twelve or more Queens, each	1.35

Write for Quotations on Quantity Lots

HERMAN AHLERS

Reference: Astoria National Bank

ASTORIA, OREGON

CLASSIFIED DEPARTMENT

Advertisements in this department will be inserted for 5 cents per word, with no discounts. No classified advertisements accepted for less than 35 cents. Count each initial or number as one word.

Copy for this department must reach us not later than the 15th of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

As a measure of protection to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisements of used beekeeping equipment or of bees on combs must be accompanied by a guarantee that the material is free from disease or be accompanied either by a certificate of inspection from an authorized inspector or agreement made to furnish such certificate at the time of sale.

BEEES AND QUEENS

WE will appreciate your business, whether large or small, and assure you the best possible service. Three-banded Italian queens \$1.00 each; six for \$5.50; dozen, \$10.00. Two-pound packages of bees with queens \$4.00 each; six at \$3.75 each; twelve or more at \$3.50 each.

P. M. Williams, Mt. Willing, Ala.

I AM booking orders for May delivery on Caucasian three-frame nuclei; also queens. Yards inspected for protection of disease. Peter Schaffhauser, Havelock, N. C.

FINEST ITALIAN QUEENS \$1.00 each. Vigorous leather-colored. Bright golden. Prompt and courteous service. Wm. R. Stephens, Wingate, Ind.

GOLDEN QUEENS producing yellow to tip. Untested, \$1.00 tested, \$2.00; young breeders, \$10.00. Come ahead with your big orders; my apiary has doubled twice over. Satisfied customers everywhere. Safe arrival guaranteed. Print your address. H. G. Karns, Victoria, Va.

WANTED—We will supply queens, Carniolan or Italian, for the very best quality of white clover and sweet clover extracted honey from northern states. See larger ad. Albert G. Hann, Glen Gardner, N. J.

STOP—See my display ad, page 215. Will save you money. Cloverland Apiary, Hamburg, La.

GOLDEN ITALIAN QUEENS—I will begin shipping about May 1. Prices: Untested, \$1.05; 6, \$5.50; 12 to 49, 80c each; 50 or more, 75c each. Hazel V. Bonkemeyer, R. 2, Randleman, N. C.

BOOMER QUEENS are guaranteed to give one full year's satisfactory service, or replaced free. Priced reasonable. Holloway's Apiaries, Marietta, Okla.

PACKAGE BEES AND QUEENS shipped on comb with government health certificate. Guarantee delivery; bad orders replaced. Price for Italian three-band stock, none better for honey producer: One-pound package bees and select laying queen, with one frame of brood and honey, \$3.25; six packages up at \$3.00 each. Same, but with two pounds of bees, \$4.25 a package; six packages up at \$4.00. For extra additional pound of bees add \$1.00 per package and 75c for extra frame of brood and honey, which will give good start to your bees right away. Send me your orders early with 10 per cent deposit as security of good faith, to be shipped April 1 by express collect. My reference, the People's Savings Bank and Trust Co., Mansura, La. Victor Prevot, Mansura, La.

PURE ITALIAN QUEENS—Untested \$1.00; tested, \$1.50. Two-pound package, \$3.00. Add price of queen wanted. Safe arrival guaranteed after May 10. Write for prices on colonies. Birdie M. Hartle, 924 Pleasant, St., Reynoldsville, Pa.

BRIGHT ITALIAN QUEENS for April and May, in Diemer-Allen cages, \$1.00 each. I am the only breeder in Kansas. Have 35 years' experience with bees. C. W. Ward, R. No. 1, LeRoy, Kans.

FOR SALE—Try Palmetto Italian bees and queens; good as any, superior to many. Prices: One queen, \$1.00; dozen, \$9.00. Package bees, two-pound package, \$3.75; five or more, \$3.50 each; three-pound package, \$4.75; five or more, \$4.50 each. Queen in each package. Health certificate with each shipment. C. G. Ellison, Belton, S. C.

PACKAGE BEES in lots of twenty-five, two-pound packages \$3.25 with queen. Shipment guaranteed. Carniolans, Goldens, Italians. All packages will be shipped from the South. Queens \$1.00 each. F. M. Russell Co., Roxbury, Ohio.

LET me explain how I am able to cage my package bees to get no drones and few old bees, and at a price of \$3.00 per two-pound package and \$4.00 per three-pound package, with select untested queens, in hundred lots. A card will bring my answer. R. V. Stearns, Brady, Texas.

REDUCED prices on American Beauty Italian package bees and queens after May 15. Limited number only. New crop honey after April 15. Tupelo Apiaries, J. L. Morgan, Propr., Apalachicola, Fla.

BRIGHT THREE-BANDED QUEENS

Daughters of mothers selected for large production, good wintering and gentleness; mothers selected from over a thousand colonies located in Wyoming. Safe delivery and satisfaction guaranteed. Untested select queens, one to ten, \$1.00; eleven to fifty, 95c; fifty-one and more, 90c each. Send all orders to J. L. Jones, manager and queen breeder, Mathis, Texas. A. D. Hardy, Owner, Powell, Wyo.

SIMMONS queens and nuclei ready for May shipment. No disease. Satisfaction assured. Now booking orders. Fairmount Apiary, Livingston, N. Y.

FOR SALE—Choice bright Italian queens. I have been building up this strain for the last 23 years for vigorous hustlers, good winterers, gentleness and fine color. These queens will equal the best on the market. Health certificate goes with queens. Prices: Untested queen, \$1.25; 12 untested queens, \$12.00; 1 breeder, \$10.00. Emil W. Gutekunst, Colden, N. Y.

PACKAGE bees and untested Italian queens. Sternberg Bros., Lockhart, Texas.

BRIGHT American Beauty Italian Bees and queens. Prompt delivery. Special two-pound package on frame emerging brood and honey, queen introduced, \$4.75 each; two-pound combless, \$3.90; ten or more, \$3.65. Three-pound package, \$4.75; ten or more, \$4.50. Select untested queens, \$1.25; five or more, \$1.00 each. Safe arrival, health certificate and satisfaction guaranteed. Fancy white tupelo honey. Tupelo Apiaries, J. L. Morgan, Propr., Apalachicola, Fla.

THREE-BANDED ITALIAN QUEENS—Untested, \$1.00; 12 or more, 80c. Tested, \$1.50. Select tested, \$2.50. Apiary inspected by state inspector. No disease found. Safe arrival guaranteed. Jul Buegeler, Alice, Texas.

BOOKING for spring 1927 my light Italian bees and queens. Two-pound packages with queen, one to ten, \$4.00; each additional pound \$1.00. Liberal discount on quantity shipped on frame of honey built from Dadant foundation Hoffman frame. Satisfaction guaranteed, health certificate attached. Twenty per cent books your order. Circulars sent. Address J. L. Gaspard, Hessmer, La. Remember Kellogg's Cereal.

PACKAGE BEES—Three-band strain only. If you want good, clean bees, prompt service and fair treatment, give me a trial. Shipped on sugar syrup without comb. Two-pound package, three-band strain, with untested queen, \$3.50. Ten or more, \$3.25. No disease. Health certificate attached. Ten per cent books your order. Satisfaction guaranteed. William Piefer, Box 83, Gause, Texas.

PACKAGE BEES—See our ad on page 215. For further information write for particulars. Louisiana Southern Bee Farm, Baton Rouge, La.

LISTEN—If you wish to purchase guaranteed queens, write for our circular and price list.

Carolina Bee Co., W. O. Curtis, Mgr., Graham, N. C.

QUEENS—Select untested, after March 15, \$1.25; 12 for \$14.00; 100 for \$1.00 each. Tested, \$2.00. Two-pound package, \$3.00; three-pound pkg., \$4.00; three-frame nuclei, \$4.00. These prices till June 1.

Curd Walker, Vidalia, Ga.,
The Natural Home of the Honeybee.

BEEES AND QUEENS FOR SALE—Let us figure with you for your 1927 bees and queens. Queens, \$1.00 each; \$10.00 per dozen. One pound of bees with queen, \$2.90; two lbs. with queen, \$4.50, charges paid to your P. O.; \$70.00 per hundred. Graydon Bros., R. 4, Greenville, Ala.

GOLDEN ITALIAN QUEENS—Tested, \$1.50; select tested, \$2.50; untested about May, one to five, \$1.00 each; six to eleven, 90c each; twelve or more, 80c each. State inspected. Safe arrival and satisfaction guaranteed. Send for price list. D. T. Gaster, R. 2, Randleman, N. C.

PLACE your order with us for early queens. Caucasian breeders, daughters of 1925 imported mothers, ready for shipment after April 1. Italians of 14 years' selecting. Caucasian untested, one, \$1.50; six, \$7.50; twelve, \$14.00; one hundred, \$100.00. Tested, each, \$2.50 after May 15. Italians, one, \$1.00; six, \$5.50; twelve, \$10.00; one hundred, \$70.00. Tested, each, \$1.50. Pure mating, safe arrival guaranteed in U. S. and Canada. Queens for export carefully packed, safe arrival not guaranteed. Tillery Bros., Route 6, Greenville, Ala., U. S. A.

PACKAGE bees and queens. Charles Wallace, Box 35, R. 1, Glenn, Cal.

PACKAGE BEES—Now booking orders. See ad, page 210. J. W. Cutts & Sons.

GOLDEN UNTESTED QUEENS—Gentle and good honey gatherers as can be found; \$2.00 each. Tested, \$4.00 each. Best breeders, \$20.00. Over thirty years a Golden Italian breeder. J. B. Brockwell, Barnetts, Va.

THOUSANDS of pounds of bees and queens ready for shipment early in April. It will pay you to get our prices before buying. Overbey Apiaries, Leonville, La.

HIGHEST grade Italian queens—Tested, \$1.50; untested, 75 cents. Package bees, one pound, \$1.50; two pounds, \$2.50; three pounds, \$3.25. Have had no disease. State inspection certificate with each shipment. Safe delivery guaranteed. T. L. Davis, Buffalo, Leon Co., Texas.

FOR SALE—Two-pound package Italian bees with queen, \$3.50; three-pound package, \$4.00. Discount on 25 packages or more. Inspection certificate with each shipment. Book your order early to avoid delay. Write me. J. L. Leath, Corinth, Miss.

FOR WEAVERS' young queens and honey-gatherers, see page 204.

PACKAGE BEES—Pettit's quality. Personally shipped from Georgia. Canadian or American money. Morley Pettit, Georgetown, Ontario.

FOR SALE—Two-pound package Italian bees with select untested queen \$3.00. All bees shipped with health certificate attached. The Mangham Apiaries Co., C. S. Duncan, Prop., Mangham, La.

GOLDEN ITALIAN QUEENS—One queen, \$1.00; six, \$5.00; one hundred, \$75.00. Pound packages on request. They are gentle and they get the honey. Try them and be convinced. Sam Foley, Greenville, Ala.

PACKAGE bees 90c per pound in 10 two-pound package lots. Peterman's select Italian queens: 1, \$1.00; 6, \$5.50; 12, \$10.00; 25, \$20.00; 100, \$75.00. Delivery starting April 1, 1927. Safe delivery and entire satisfaction guaranteed. H. Peterman, Lathrop, Calif.